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THE THERAPEUTICAL APPLICATIONS

OF

HYDROZONE

AND

GLYCOZONE

BY

CHARLES MARCHAND, Chemist,

GRADUATE OF THE "ECOLE CENTRALE DES ARTS ET MANUFACTURES DE PARIS" (FRANCE).

RATIONAL TREATMENT OF DISEASES

CHARACTERIZED BY THE PRESENCE OF PATHOGENIC GERMS.

FIFTEENTH EDITION.

NEW YORK.

1900.

TO THE MEDICAL PROFESSION.

I respectfully call your attention to the fact that I manufacture **Hydrozone** at the request of the leading Medical Profession, whom experience has taught, that in the treatment of many diseases caused by pathogenic germs, the bactericide power of my Peroxide of Hydrogen (medicinal), (fifteen volumes,) is not always sufficient to thoroughly destroy quick enough the microbian element, which frequently develops with such prodigious rapidity, that it is urgent to check and overcome its virulence in the shortest possible time, so as to prevent the whole system of economy from being invaded by poisonous ptomaines.

Hydrozone yields thirty times its own volume of "Nascent Oxygen" (near to the condition of **Ozone**) and it is far superior to my Peroxide of Hydrogen (medicinal), in healing properties.

Hydrozone retains its germicide and curative power for any length of time when kept with ordinary care.

It is slightly acid to the taste, and it should never be made neutral before using, even in the treatment of diseases of the most delicate mucous membrane.

A host of imitators and substitutors of drugs are filling prescriptions with commercial Peroxide of Hydrogen, which is good enough for bleaching purposes, but totally unfit, unsafe and always worthless as a remedy.

They claim that it is "just as good" as the genuine article, but they take great care not to say, that this cheap article which I sell in bulk at four cents per pound leaves them a profit varying from 500 to 1,000 per cent.

By so doing, substitutors of drugs place the physician's reputation as well as his patient's life in jeopardy, and the only effective manner to check this fraudulent business is to expose these criminals through Medical Journals and Daily Papers.

This course, which is already followed by several manufacturers of legitimate preparations will benefit the honest druggists, the physicians and their patients.

In order to protect the Profession against fraud, my medicinal preparations are put up only as follows:

Hydrozone.—(thirty volumes preserved H_2O_2 solution): Extra small size (for Dentists), small, medium and large size bottles, bearing a red label, white letters, blue and gold border, with my signature.

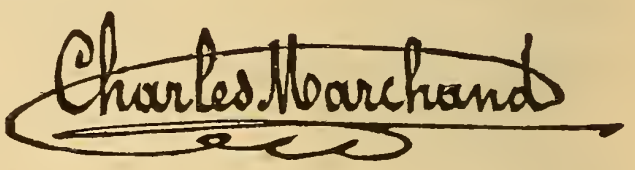
Charles Marchand's Peroxide of Hydrogen (Medicinal) (fifteen Vol. H_2O_2):—$\frac{1}{10}$ lb., ¼ lb., ½ lb., 1 lb. bottles bearing a blue label, white letters, red and gold border with my signature.

Glycozone.—¼ lb., ½ lb., 1 lb. bottles, bearing a dark yellow label, white and black letters, red and blue border with my signature.

Marchand's Eye Balsam.—One size bottle packed in a box, sealed with my signature.

Please prescribe in original, unbroken packages, to avoid imitations and disappointment.

Yours respectfully,



Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France).

NOTE.

Although all bottles of Hydrozone and Marchand's Peroxide of Hydrogen (Medicinal), are now and will be hereafter, corked with an "Automatic Safety Valve Rubber Cork" (Patent applied for May 15th, 1900) these preparations must always be kept in stock at the lowest temperature possible, in a standing position.

As long as the bottles are kept in stock standing up, the pressure resulting from shaking and exposure to a high temperature while in transit, will never rise above eight pounds to the square inch; therefore neither breakage nor leakage can occur.

Marchand's H_2O_2 (medicinal) freezes at 8° to 10° F., while Hydrozone freezes at about 5° F.

When such occurs allow them to thaw slowly at a temperature below 65° F., thus avoiding deterioration.

TO THE MEDICAL PROFESSION.

The Fifteenth edition of this book contains the directions for using Hydrozone, Glycozone and Eye Balsam.

Hydrozone being a 30 Volume H_2O_2 aqueous solution, is twice as strong as my medicinal H_2O_2 (15 volumes). Therefore, when my medicinal H_2O_2 is prescribed, the dose should be at least double in order to obtain satisfactory results.

I earnestly request Physicians to prescribe Hydrozone in preference to my medicinal H_2O_2, not only on account of its wonderful bactericide properties, but also owing to its being far superior in stimulating and healing action upon diseased tissues.

It will afford me great pleasure to embody in the Sixteenth edition of this book, all scientific reports which may appear in the Medical Press, between now and the first of January, 1902. Full credit will be given to both the writer and medical journal.

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NOTE. I will also refer the medical profession to a treatise on "Diseases of the Ear, Nose and Throat and their Accessory Cavities," by Prof. Seth Scott Bishop, M. D., D. C. L., LL. D., of Chicago. Second edition, published by F. A. Davis Co., of Philadelphia, Pa.

Refer also to "Diseases and their Cure," by O. H. Randall, M. D., of Quincy, Ill.

STANDARD

FOR

CHARLES MARCHAND'S

PEROXIDE OF HYDROGEN,

(MEDICINAL)

AND

HYDROZONE.

First—Free from soluble salts.

Second—Free acid contained in 100 cubic centimetres requires not less than one c. c. and not more than three c. c. of normal volumetric soda solution, to be neutralized.

Third—Peroxide of Hydrogen yields not less than fifteen volumes of available nascent oxygen, which corresponds to 4.5% of anhydrous H_2O_2. Hydrozone yields not less than thirty volumes of available nascent oxygen, corresponding to 9% of anhydrous H_2O_2.

Test.—One cubic centimetre of Peroxide of Hydrogen diluted with 150 c. c. of distilled water, containing two c. c. of C. P. sulphuric acid decolorizes at least **fifteen cubic centimetres** of a solution containing **5,665** grammes of C. P. permanganate of potash, per liter of distilled water.

One c. c. of Hydrozone being submitted to the above test decolorizes **at least thirty c. c.** of the same solution of permanganate of potash.

Marchand's H_2O_2 (medicinal) and Hydrozone retain their strength for any length of time, when kept in stock with ordinary care at a temperature not exceeding 70° F.

Prepared only by Charles Marchand

Chemist and Graduate of the "Ecole Centrale des Arts et Manufactures de Paris" (France.)

NOTE.—One cubic centimetre of "Hydrozone" is not only equivalent in bactericide power, to two cubic centimetres of my H_2O_2 (medicinal) but it is far superior as a healing agent. **See p. 11: Important information on H_2O_2 (medicinal) and Hydrozone.**

L. D. KASTENBINE, A. M., M. D.,

Professor of Chemistry, Urinology and Medical Jurisprudence, Louisville Medical College; Professor of Chemistry, Louisville College of Pharmacy,

Reports as follows in the *Louisville Medical Monthly* for July, 1894:

(See article headed "Hydrogen Dioxide," H2 O2, page 162.)

Of the various brands of Hydrogen Dioxides, I have examined, I find Marchand's to be the one which yields the largest amount of available oxygen under all conditions of exposure, about fifteen volumes, and the one which contains the minimum percentage of free acid. All the marketable articles I have seen are free from barium compounds, but the majority do not come up to the fifteen volume standard, but are six, eight, ten and twelve volume solutions. * * *

The above statement is strongly confirmed by the following report:

THE REAL VALUE OF THE MEDICINAL PEROXIDE OF HYDROGEN PREPARATIONS FOUND IN THE MARKET.

By H. ENDEMANN, Ph. D., Chemist, of New York.

Formerly Associate Chemist to the New York City Board of Health.

Published by the *Times and Register*, of Philadelphia, Pa., Dec. 15, 1894.

My attention having repeatedly been called to several reports and analyses made by chemists and published by some medical journals, I concluded to examine all the brands of Peroxide of Hydrogen that I could find on the market, in order to ascertain the real value of each when intended to be used as an antiseptic remedy, both internally and externally.

The reports on the subject which have come to my knowledge are quite contradictory, and my object is to impart to the medical profession the results of my experiments, which have been made on thirteen fresh samples, purchased by me in duplicate, directly from the manufacturers or their selling agents.

These brands have been tested for the volume of available oxygen, the amount of residue, the degree of acidity, and the amount of soluble barium salts contained therein, as per following table:

BRANDS OF H_2O_2 SOLUTIONS.	Volume of Available Oxygen determined by means of a solution containing 5.665 Grammes of Permanganate of Potash per litre of distilled water.	Residue obtained from 100 C. C. of Peroxide of Hydrogen dried at 120 degrees C.	Acidity expressed in Cubic centimetres of Normal Volumetric Soda Solution for 100 C. C. of Peroxide.	Baryta found in Soluble Baryum Salts contained in 100 C. C. of Peroxide.
No. 1. John Bene's H_2O_2 (medicinal)	10.50	0.1886	2.19	None
No. 2. Hydrozone.....	27.35	0.2180	3.11	"
No. 3. Larkin & Scheffer's H_2O_2 (medicinal)	9.65	0.1206	6.75	"
No. 4. Mallinckrodt's " "	9.55	0.1408	1.43	"
No. 5. Marchand's " "	16.55	0.0564	1.29	"
No. 6. McKesson & Robbins' " "	10.95	0.0540	0.44	"
No. 7. Oakland Chemical Co.'s " "	10.50	0.0382	0.34	0.0017
No. 8. Peuchot's " "	10.60	0.4674	1.77	0.0018
No. 9. Powers & Weightman's " "	8.40	0.0830	2.04	None
No. 10. Pyrozone, 3 per cent. " "	11.20	0.0534	0.76	"
No. 11. Rosengarten & Son's " "	3.10	0.1002	0.25	"
No. 12. Smith, Kline & French Co.'s " "	6.15	0.0880	2.6	"
No. 13. E. R. Squibb's " "	12.40	1.004	12.04	"

By referring to this table it is easily understood that sample No. 2, **"Hydrozone"** is far superior to any other brand which I have ever examined.

When Hydrozone is diluted with distilled water, in the proportion of half and half, the resulting mixture contains about 13.5 volumes of available oxygen.

Sample No. 13 comes next to sample No. 5, but it is readily seen that the degree of acidity is entirely too large for a preparation which is to be applied to the most sensitive diseased mucous membranes.

Acidity.—The thirteen brands which I have examined contain free acids (phosphoric, sulphuric, muriatic); and I must say that Peroxide of Hydrogen (medicinal) should never be made neutral before using, even in the most delicate cases: Neutral Peroxide of Hydrogen rapidly decomposes under all conditions of exposure.

The keeping properties of H_2O_2 solutions vary a great deal with the degree of purity and the percentage of free acids contained therein.

If the proportion of acid is too large, it acts as an irritant upon diseased surfaces. If it is too small the solution does not keep well.

My opinion is, that a standard solution of medicinal H_2O_2 must answer the following tests.

First.—It should contain at least fifteen volumes of available oxygen.

Second.—The quantity of free acids contained in 100 cubic centimetres should require not less than one c. c. and not more than three c. c. of normal volumetric soda solution, to be made neutral. Such a small quantity of free acid is not objectionable.

Third.—It should not contain any soluble baryta salts.

Fourth.—It must be free from sediment.

It is to be noticed that brand No. 11 is valueless.

The brands No. 7 and No. 8 are not fit for medicinal uses, owing to the fact that they contain soluble baryta salts.

The brand No. 3 has a heavy sediment of sulphate of baryta, which may be considered inert towards the system, but it is certainly detrimental to the keeping qualities of the preparation.

Brand No. 13 which is sold as a ten volume solution, is really twelve volumes, but it is too acid.

Brand No. 5 which is sold as a fifteen volume solution, is really 16.55 volumes, viz.: About 10 per cent. above the standard.

The brand No. 2, "Hydrozone," which is sold without any mention of volume, is really a 27.35 volume solution, viz.: 90 per cent. above the standard.

None of the other brands come up to the standard, but on the contrary they run from 35 to 55 per cent. below.

Note.—Dr. H. Endemann in his subsequent report headed, "The Keeping Qualities of the Various Brands of Peroxide of Hydrogen," published by the Philadelphia *Medical Times and Register*, March 2, 1895, writes:

"All the above samples having been kept for three months in the dark at a temperature ranging between 63° and 52° F., the only brand which still answers to the standard is the No. 5 (14.90 volumes).

Brand No. 2, "Hydrozone," which was 27.35 volumes in November, (90 per cent. above the standard) showed 25.90 volumes when retested in February, 1895 (about three times as strong as brands Nos. 1, 3, 4, 7, 8, 10, 13), consequently its high degree of strength as well as its keeping properties are thoroughly reliable.

My opinion concerning Peroxide of Hydrogen for medicinal purpose is, that strong solutions will soon be exclusively in use, as I consider that even a fifteen volume solution is not always powerful enough. Should this strength be sufficient in many cases, the twenty-seven or thirty volume solution can easily be reduced to fifteen volumes, so that the strong solution will answer all requirements."

The above reports were confirmed by a letter from Dr. Endemann, which appeared in the "Times and Register," for July 13, 1895.

PEROXIDE OF HYDROGEN.

By J. P. Parker, Ph. G., M. D., of St. Louis, Mo.

(Published by the Annals of Ophthalmology and Otology, of St. Louis, Mo., for April, 1895).

(Abstract from the *Times and Register*, June 8, 1895.)

I have used Peroxide of Hydrogen quite extensively for cleansing discharging ears, the nasal and accessory cavities, and have tried all the brands of the preparation in the market, and once thought one manufacturer's make as good as that of another, and bought the cheapest as a matter of economy, but recent experience has taught me that the difference in quality is greater than the difference in price. After an unpleasant experience with a solution of Peroxide of Hydrogen which severely injured the mucous membrane, I bought and examined, chemically, a bottle of each preparation of H_2O_2 in the market and was surprised to find so much difference. Some are useless, and others worse than useless because they contain too little available oxygen and too much free acids (phosphoric, sulphuric, hydrochloric). I now order Marchand's (medicinal) exclusively because I find it contains the desired quantity of available oxygen and not enough free acid to be objectionable, and its keeping properties are all that could be desired.

By inquiry I learn that Marchand's is the preparation that is used by almost all surgeons, and it is considered by them the standard.

My personal experience with Peroxide of Hydrogen confirms entirely the statement of Dr. J. P. Parker. I have used exclusively Marchand's brand until lately, when I experimented with Hydrozone. Then I gave up entirely the use of Peroxide of Hydrogen giving the preference to Hydrozone on account of its strength, which cannot be compared with any other brand, even Marchand's. I must say that the results which I obtained with Hydrozone are most gratifying.—Ed.

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RELATIONS OF BACTERIA TO DISEASE.

The branch of science named bacteriology was opened to the medical profession by the classic researches of Prof. Pasteur in the settlement of the question of spontaneous generation, and in his subsequent studies of the process of fermentation. With the investigations of that distinguished French *savant* began our first positive knowledge of the definite relations of bacteria to disease in the animal kingdom.

Prof. Robert Koch, of Berlin, has contributed widely by his experiments to the progress in knowledge of etiology of infectious and contagious diseases.

Owing to the methods which he has devised in order to practically and easily isolate different species of bacteria, we are now enabled to follow the phases of their development in pure cultures under varying circumstances.

Microscopic examinations show that, during the various stages of their life, bacteria present different forms and dimensions; but it is also demonstrated that one species of bacteria, placed under the same circumstances, always present the same forms, and produce the same effects.

Bacteria belong to the vegetable kingdom; they are vegetable cells which can be cultivated in a suitable medium under favorable conditions of temperature. The nutrient material must be free from pre-existing micro-organisms, called microproteine.

The pathogenic bacteria only are of the greatest interest to the physician, as they are supposed to be a cause of infectious diseases in human beings, and, according to the definition given by Prof. Koch, a micro-organism is pathogenic when it presents the following characteristics:

First.—It must be found in the excretions, secretions, or tissues of the animal suffering or dead from the disease.

Second.—The micro-organism must be cultivated out from the organism.

Third.—A pure culture inoculated in an animal should reproduce the disease.

Fourth.—The bacteria should be found in the humors or tissues of the animal after death.

Pathogenic bacteria produce poisonous ptomaines, which constitute a transition stage between an organic and an inorganic condition of matter in process of putrefaction.

Some ptomaines are poisonous and toxic while others are non-poisonous.

Pathogenic bacteria are differently affected in their infective power by the soil in which they grow; some of them have merely a local action, while others produce the infection of the whole system with prodigious rapidity.

These facts have been demonstrated from microscopic examinations: for example the autopsy shows that the blood of a patient who died from diphtheria is invaded with a large number of Klebs-Lœfler bacilli and toxines, the same germs being also present in diphtheritic membranes, although the disease was at first a local affection.

The blood of a patient who died from anthrax contained a large number of anthracis bacilli, which were at first found only in the excretions or pus coming from the infected surface.

Therefore the infection does not always invade the system immediately, and it is previous to the period of incubation, or infection, that the microbian element should be either eliminated or neutralized by antiseptic remedies.

Micro-organisms (vegetable cells) in the atmosphere have been shown by Ehrenburg to exist in masses or clouds, so that, in a room containing infection, a portion of the air may be loaded, while other portions are free, which would seem to explain cases of escape from septic or zymotic influences.

It is owing to the existence of these micro-organisms, that Profs. Pasteur, Koch, Tyndall and other scientists have been able to establish the germ theory, and the etiology of diseases.

Recent investigations, made by bacteriologists, lead them to introduce some modifications in the germ theory and I will quote

here an article which appeared in the *Medicine and Science* of Portland, Me., for May, 1897, which reads as follows:

MODIFICATIONS IN THE GERM THEORY.

When the bacteriologists Roux and Yersin, after careful investigations and experiments extending through several months, declared that the Klebs-Lœfler bacillus was to be found in a large number of normal throats, and that too in parts of the country where diphtheria has not been epidemic for years, scientists were driven to conclude that either the germ was not the cause of the disease or else that some other factor other than the bacillus entered, to quite a large extent, into the problem. See article headed "Predisposition to Disease," p. 5.

The germ theory as first promulgated, was delightfully simple. It amounted to this: Every contagious disease is due to a specific germ; no microbe, no disease; eliminate the microbe, cure the disease. This was a plain statement which all could understand, but further experience proved that exceptions were continually cropping out, and the conditions upon which these exceptions depended were found to be more and more complex and perplexing.

Of late Drs. Roux and Metschnikoff, and the Chemist Duclaux, successor to Pasteur, as director to the "Institut Pasteur," each working separately, after many experiments and much study, have all come to about the same conclusion, which they have formulated as follows: "Cases in which the microbe is found but not the disease are especially frequent, so that bacteriologists have come reluctantly to recognize, that not the presence of the germ but some peculiar virulent condition of the microbe causes the disease. In other words, the diseased condition seems to be common to both the germ and the patient,—the germ does not cause the malady until it itself first becomes diseased, and the problem which really confronts us is to find out what ails the microbe."

For a long time investigators found it a difficult task to differentiate the bacillus of typhoid fever, and also the spirillum of cholera, from a host of apparently similar bacteria found widely spread in nature, and which latter were to all appearances harmless. In attempting to solve this problem, more and more delicate and intricate,

technical methods were invented in order to enable the bacteriologists to decide with certainty, which, of the many germs present, were the true pathogenic germs which caused these two diseases. Dr. Roux has declared his conclusion to be that the changes in virulence in microbes are the rule rather than the exception; and Dr. Metschnikoff says that cholera bacillus is widely disseminated in water in many places, practically all over the world, and that its power as a specific agent in causing cholera is due to extrinsic circumstances which have modified its virulence. Duclaux has devoted his attention to the study of typhoid fever, and he is positive that in this disease we have to deal with a family of bacilli, some individuals of which, under certain circumstances not well understood, are pathogenic and will cause the disease, and that the others, belonging to the same family but in different conditions of life or of environment, are harmless.

The conclusions accepted by many of the leading scientists may be summed up as follows: In every germ disease one has to deal with a family of microbes in which some of the members of each family are specially pathogenic and some are not. These last may become virulent under certain conditions not well understood, but the main factor seems to be the passage of the bacillus through one or more individuals whose lowered resistive vitality make them subject even to the originally attenuated virulence of the bacilli.

It is, perhaps, to be deplored that all later investigations seem to have thrown some doubt on the value of positive testimony in bacteriology. Most physicians had come to accept the conclusion that if, after making a proper culture, the germs were found, that this fact alone was positive proof of the presence of the disease, but that on the other hand, so much reliance could not be placed upon negative evidence, for sometimes the disease existed when no germs could be found. The present status of the question seems to be that neither the positive nor negative evidence is entirely reliable, but that in order to produce a disease the germ must be found occupying a certain environment, or itself presenting certain abnormal conditions, or undergoing certain diseased transformations.

Professor Duclaux has also pointed out that if the recent conclusions are correct it will be found that the hygienic precautions looking to the prevention of the contamination of water supplies which we

have heretofore considered trustworthy, will now be found to be unreliable. For the bacilli of the disease are so widespread in nature and so liable to become pathogenic, though they may not before have been virulent, that the simple precaution of protecting the water supply from contamination by human excreta may prove to be illusionary.

Anyway, if we are candid, we must acknowledge that those who know the most about the germ theory of disease have still very many things to learn and some problems yet to solve.

PREDISPOSITION TO DISEASE.

The above statement leads to the following logical explanation of "Predisposition to Disease."

Assuming that all human beings are exposed, during their life, to absorb millions of pathogenic germs (vegetable cells), why is it, that some individuals, are more liable than others, to be the victims of their destructive and infectious action?

Why is it that some individuals catch disease, while others, who are exposed to the action of the same germs, remain free from it?

Is it due to the peculiar virulent condition of the microbe at the time it is absorbed by an individual, or else, is it due to the impaired vitality of the animal cells, with which the microbian element comes in contact?

Disease may be due to the peculiar virulence of germs, but it is quite logical to admit that even in case the virulence of germs is relatively feeble, disease may develop just the same, when the vitality of our animal cells with which they come in contact is more or less impaired.

Infectious diseases are undoubtedly the consequence of a chemical reaction, that takes place (under favorable conditions of temperature and moisture) when putrefactive alkaloids, or poisonous ptomaines (formed by action of bacteria on organic matter) come in contact with weakened animal cells, and remain there for a certain length of time.

Every physician knows, that some harmful atoms of different character, may remain in contact forever, without entering into chemical combination.

For instance, the main constituents of the air, oxygen 20.61 vol., and nitrogen 77.95 vol. which are mixed together, never enter into chemical combination, unless the atoms of oxygen and nitrogen are in a state of peculiar affinity; then they may combine, in various proportions, forming nitrogenous compounds, which are more or less poisonous to human beings.

The same laws apply to both "organic chemistry and inorganic chemistry." Therefore, it is not strange that germs (which we constantly absorb) may remain in contact with our animal cells, without entering into organic chemical combination, until an abnormal condition of either one or the other elements in presence helps this chemical reaction to take place.

Then the resulting compound may be either poisonous or harmful to the system.

The conditions of life are such, that this chemical combination may take place at any time, since both elements, "Germs and our Animal cells" are constantly in contact.

For instance, exposure to a sudden change in the temperature may promote the chemical combination to take place. Therefore although it is true, that pathogenic germs are present, when disease sets in, it does not imply that they are the only factors causing disease, since they are also present when disease does not exist.

Improper nutrition, insufficient supply of air, overwork, etc., may also help this organic chemical reaction to take place.

The whole organized body may be regarded as a congeries of cells, having different endowments, each set being concerned in special acts connected with absorption, nutrition and secretion, wherever action of selection or elaboration has to be effected. (*Dunglison's Med. Dict.*)

Our blood, entering every organ through the circulation, distributes nutritive principles to every set of cells.

When blood is normal, that is to say, when its constitutive elements are in their normal proportions, all our cells receive a proper nutrition and therefore, they remain strong and healthy.

Hence, they may resist the destructive action of the toxines, which they either neutralize or else eliminate from the system. Disease cannot develop.

On the contrary, when blood is abnormal, that is to say, when some of its constituents are in deficiency while others are in excess, some of our animal cells may be deprived of receiving the necessary amount of the nutritive principles which are indispensable to their existence. Therefore, their strength and vitality being impaired, they cease to accomplish their functions and become liable to enter into chemical combination with the micro-organisms which constantly surround them.

From that time, pathogenic germs may cause disease, because the animal cells are too weak to either neutralize or else eliminate them from the system.

In fact, disease develops only when either the neutralizing or eliminating power of our animal cells are in deficiency, towards their absorbing power.

The equilibrium being upset, micro-organisms develop, and produce toxines, which cause either a local or general infection resulting from the above mentioned chemical reaction.

Therefore, pathogenic germs should not be allowed to remain in the system long enough for the toxines to invade the system.

We absorb most all germs through the mouth, while we eliminate them through the skin, the intestines and the urinary tract.

When our animal cells are powerless to prevent the above mentioned chemical combination from taking place, by either neutralizing or else driving away from the system the microbian element, antiseptic remedies must be resorted to, so as to help nature in its work.

Requirements of an Antiseptic.—(See article headed "Essential Requirements of a Modern Antiseptic," by Dr. R. C. Kenner, p. 255.) An antiseptic should possess the following properties:

First.—It must be most powerful, not only as a destructive agent of pathogenic germs, but also as a neutralizing and oxidizing agent of toxines.

Second.—It should have no injurious action upon animal cells, neither toxic nor corrosive.

Third.—It should "stimulate" healthy granulations and strengthen the surrounding tissues of any diseased surface.

Fourth.—It should destroy the unhealthy secretions and excretions such as pus, etc., so as to leave a clean surface.

Among antiseptics which are used in medicine I find: Bichloride of mercury, sulphate of zinc, chloride of zinc, sulphate of copper, nitrate of silver, carbolic acid, salicylic acid, iodoform, iodine, chlorine, chloride of lime, hypochlorite of soda, permanganate of potash, chromic acid, sulphurous acid, eucalyptus, sulphide of calcium, etc.

The above mentioned drugs being injurious to healthy tissues, destroy both the pathogenic germs and the animal cells.

Other drugs, such as borax, boracic acid, tannin, etc., are harmless to healthy tissues, but being powerless to interfere with the chemical reaction referred to, article headed "Predisposition to Disease," p. 5, they are worthless and deceiving remedies.

Poisonous drugs may aggravate the disease by weakening and irritating slowly but constantly, the surrounding healthy tissues. In fact, they do fully as much harm as the microbian element itself.

Whenever a patient has recovered under the action of poisonous drugs, **"Nature has surely accomplished wonders,"** since she has been powerful enough to either eliminate or else neutralize both poisons, viz: the toxines and the injurious drug.

Physicians understand organic chemistry, therefore they will surely agree with me when I emphatically state here "that empiric treatment of diseases by means of poisonous drugs does more harm than good." Hence, it should be discarded for the benefit of mankind and the honor of the medical profession.

RATIONAL TREATMENT OF DISEASES.

Action of Ozone Upon Virus.—The rational treatment of diseases is based upon the use of powerful antiseptics which are at the same time harmless to healthy tissues. See articles headed, "Requirements of an Antiseptic," p. 7,—"Essential Requirements of a Modern Antiseptic," by Dr. R. C. Kenner, p. 255.

Bacteriologists and chemists have demonstrated that all virus is albuminoid, whether propagative or not; it is destroyed or by coagulation rendered inert, by the oxidizing action of Ozone saturated with water. Dry Ozone is irritating to both healthy and diseased animal

tissues. An aqueous solution of Ozone is readily transformed into an aqueous solution of H_2O_2: $H_2O+O_3=H_2O_2+O_2$.

Ozone formula O_3, or condensed oxygen O_2+O, is nature's disinfectant "par excellence." It is the most powerful destroyer of germs, and yet it is the "life giving element" to human beings.

Houzeau found the air of the country at the height of six feet above the ground to contain $\frac{1}{450000}$ of its weight of Ozone, or $\frac{1}{700000}$ of its volume.

This very small quantity of Ozone (which is always damp) is sufficient, owing to its wonderful oxidizing power to destroy germs.

Ozone is a normal constituent of fresh air; its proportion varies with temperature and electric conditions of the atmosphere.

Billard, Wolfe, Boeckel and Strambes agreed that the cholera, when it raged in Strasbourg, Berlin and Milan, coincided with the absence of Ozone in the atmosphere, and that Ozone reappeared at the end of the epidemy.

These observations are in perfect accord with those obtained by Dr. F. H. Hammond. Drs. Moffat, Romain, Vigouroux, Uhle, and other scientists also attribute the prevalence at a time of cholera, malarious fever, to the absence of Ozone in the air.

Is it due to an excessive production of miasms relatively to the normal proportion of Ozone, or is it because Ozone is in deficiency to destroy the germs?

No one could answer this question, but a positive fact is, that: "If Ozone is in excess there is no epidemy."

The wonderful antiseptic value of Ozone has attracted the attention of all scientists, and a number of chemists have devised different methods of its production; but none of these processes could be used to manufacture Ozone industrially.

Therefore, Hydrozone, (30 vol. aqueous solution of H_2O_2) which is always on a strain to break up into water and "Nascent Oxygen" near to the condition of Ozone, is bound to fill all the requirements of a powerful and at the same time harmless antiseptic.

Hydrozone yields thirty times its own volume of "Nascent Oxygen" near to the condition of Ozone.

The following synopsis shows the similarity which exists between the oxidizing power of both "Hydrozone" and "Ozone."

COMPARATIVE CHEMICAL REACTIONS BETWEEN HYDROZONE AND OZONE.

Iodide of Potassium Solution in presence of	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction	Potash and Iodine.
	Ozone, dissolved in water.	Result of reaction	Potash and Iodine.
Permanganate of Potash Purple Solution in presence of	H_2O_2 30 vol. Acidulated Solution (Hydrozone.)	Result of reaction.	Immediate discoloration. Escaping of Oxygen Gas and formation of brown Oxide of Manganese.
	$K_2Mn_2O_8 + 4\,H_2O_2 = 2\,KHO + Mn_2H_6O_6 + 4\,O_2$		
	Ozone, dissolved in water.		Same result.
Peroxide of Iron Salt Solution and Ferricyanide of Potassium Solution mixed together in presence of	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction.	Ferricyanide is transformed into Ferrocyanide of Potassium, giving a blue coloration.
	Ozone, dissolved in water.		Same result.
Tincture of Indigo in presence of	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction.	Decoloration.
	Ozone, dissolved in water.		Decoloration.
Nitrous Acid in presence of	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction.	Formation of Nitric Acid.
	Ozone, dissolved in water.		Same Result.
Arsenious Acid in presence of	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction.	Formation of Arsenic Acid.
	Ozone, dissolved (Hydrozone.)		Same result.
Tincture of Guaiacum mixed with either Blood or Extract of Malt.	H_2O_2 30 vol. Sol. (Hydrozone.)	Result of reaction.	Blue coloration, with effervescence and coagulation of albumen.
	Ozone, dissolved in water.	Result of reaction.	Same reaction.
Organic substances such as Cotton, Woolen, Silk, Feathers, Hair, Bones, Ivory, etc., in presence of	H_2O_2 30 volume Alkaline Sol. (Hydrozone.)	Result of reaction.	Oxidizing and Bleaching Action.
	Ozone, dissolved in water, Alkaline.		Same result but slower Action.

IMPORTANT INFORMATION ON H_2O_2 AND HYDROZONE.

Anhydrous Peroxide of Hydrogen formula $H_2 O_2$ is a syrupy liquid which contains 475 times its volume of Oxygen, Density, 1.452.

It is a very unstable compound with slight acid reaction to the litmus paper. Its decomposition into water and nascent oxygen takes place under the most enigmatical circumstances, hence it is not an article of commerce.

According to the U. S. Pharmacopœia, a 3 per cent. aqueous solution of Peroxide of Hydrogen yields about ten times its own volume of oxygen. (Careful practitioners know that in many cases such a weak solution of $H_2 O_2$ is deceiving on account of being powerless to destroy germs.)

Charles Marchand's H_2O_2 (medicinal) yields fifteen times its own volume of nascent oxygen, which corresponds to a 4.5 per cent. aqueous solution, of anhydrous H_2O_2.

Hydrozone yields thirty times its own volume of nascent oxygen, corresponding therefore to a 9 per cent. aqueous solution of anhydrous $H_2 O_2$. It is a preserved aqueous solution which retains its strength for any length of time, when kept at a temperature not exceeding 70° F.

Both Hydrozone and my medicinal H_2O_2 are slightly acid in taste.

Hydrozone is not only twice the strength of my medicinal H_2O_2, but it is far superior as a healing agent.

In no instance should Hydrozone be made either alkaline or neutral before using, even when it is applied to the most delicate diseased mucous membranes.

Bacteriological experiments made upon cultures of pathogenic germs demonstrate that:

One cubic centimetre of Hydrozone which contains traces of acid, is equivalent for its bactericide power to:

Two cubic centimetres of the same preparation after it has been made neutral by the addition of either lime water, bicarbonate of Soda, Ammonia, etc.

And to three cubic centimetres of the same preparation after it has been made slightly alkaline by the addition of a small excess of alkali.

My medicinal H_2O_2 freezes at 8° to 10° F. Hydrozone freezes at about 5° F. When such is the case, thaw them out slowly at a

temperature not exceeding 65° to 70°. F., so as to prevent deterioration.

Action of Hydrozone (thirty vol., aqueous solution of H2 O2) upon Animal Cells and Vegetable Cells.—See report by Dr. Paul Gibier, p. 81; also report by Dr. S. Potts Eagleton, p. 92. The Requirements of a Modern Antiseptic, by Dr. Kenner, p. 255.

Experiments made by bacteriologists prove beyond doubt that:

First.—Hydrozone has no injurious effects upon animal cells.

Second.—It has a very energetic destructive action upon vegetable cells—microbes.

Third.—It has no toxic properties; five cubic centimetres injected beneath the skin of a guinea-pig do not produce any serious result, and it is also harmless when administered internally.

Fourth.—It is a stimulant to granulating tissues.

Fifth.—It has no corrosive action whatever upon the healthy mucous membranes when used in diseases caused by germs, such as Diphtheria, Scarlet Fever, Whooping-cough, etc.

Sixth.—It is the pus destroyer "par excellence." See article headed The Necessary Peroxide of Hydrogen, by Dr. Robert T. Morris, p. 80.

Note.—Although Hydrozone has nc toxic properties, it should never be injected into the circulation of the blood on account of its coagulating the albumen. One cubic centimetre of Hydrozone being injected into the femoral vein of a dog kills the animal almost instantly, when the free egress of oxygen gas (which is generated in the circulation), is prevented by external pressure of the vein. It stops the circulation at once.

Action of Hydrozone upon Open Diseased Surfaces. Its Use as a Hæmostatic.—When Hydrozone is brought into contact with any open diseased surface, either of the skin or of the mucous membranes, its decomposition takes place immediately; nascent oxygen (near to the condition of Ozone) is set free, the albuminoid element of the unhealthy secretions is coagulated, pus corpuscles are destroyed and the pus process is checked, the bacteria as well as their spores being annihilated. The tissues beneath are restored to a healthy condition.

Nascent oxygen after oxidizing and cleansing the infected surface is readily transformed into ordinary oxygen.

Owing to the fact, that Hydrozone coagulates albumen, it is a hæmostatic "par excellence." (See article headed Peroxide of Hydrogen as a Hæmostatic, by Dr. F. M. Coomes, p. 233. See also "Hemorrhage in Obstetric Practice," by Dr. G. M. Blech, p. 276,—

"Traumatic Nasal Hemorrhage," by Dr. M. A. Goldstein, p. 278.) The following article appeared as an editorial in the *Alkaloidal Clinic*, for October, 1897, under the heading, "Nasal Hemorrhage:"

"The treatment of this condition is often troublesome and exasperating in the extreme. While it is usually a self-limited condition it may go on to syncope and death. Most of the older and recognized methods are disagreeable and many of them inefficient. It has been our pleasure to find in Hydrozone a remedy *par excellence*. The nose should be syringed out with a full-strength solution, and while the foam is still bubbling out, pack the nostril tightly with cotton saturated with the same remedy. The result is magical, without pain or unpleasant after-effects. Some hours later the cotton may be removed and there are none of the disagreeable clots that accompany the application of astringent tampons, the detachment of which so often occasions a recurrence of the condition."

It is of great importance to notice that water charged with thirty times its own volume or ordinary oxygen gas under pressure, has no similar action whatever on the albuminoid substances, as there is neither coagulation nor cleansing effect upon unhealthy secretions. In fact it does not destroy pathogenic germs, and it has no healing action whatever.

This remark plainly establishes the difference between the therapeutical value of Hydrozone and the "Oxygen" or so-called "Compound Oxygen treatment."

Hydrozone is recognized by leading physicians (see the opinion of the medical profession on pp. 73 to 292) as being the most powerful and reliable bactericide known. It has no equal, not only as a pus destroyer, but also as a stimulant to healthy granulations

Caution.—When Hydrozone has been applied to a diseased surface, the morbid element being thoroughly destroyed, poisonous antiseptics, such as Bichloride of Mercury, Carbolic Acid, Iodoform, etc., should never be used as a local dressing, owing to the fact that the healthy tissues are apt to absorb the toxic with such a prodigious rapidity, that the most serious disorders might set in. This remark applies to the treatment of all open sores, and particularly to the treatment of fistulous sores, suppurative diseases of the ear, mastoid abscesses, etc., where the patient might be poisoned. Therefore the dangers (attributed by some practitioners to H_2O_2) of using H_2O_2 in cleansing cavities are due not to H_2O_2, but to the absorption of poisonous drugs which are subsequently applied to the sore.

I now submit to the profession the results of comparative tests which I have made, in order to establish experimentally the respective bactericide potency of the following chemicals:

QUANTITY OF THE MIXTURE OR 3% SOLUTION OF THE FOLLOWING CHEMICALS REQUIRED TO ANNIHILATE THE SAME GIVEN AMOUNT OF KLEBS-LŒFLER BACILLI.

	Cubic Centimetres.
Hydrozone (harmless) 30 volumes aqueous solution of $H_2 O_2$	1.00
Biniodide of mercury	1.00
Biniodide of silver	1.33
Marchand's Peroxide of Hydrogen, medicinal (harmless) 15 volumes aqueous solution of $H_2 O_2$	2.00
Bichloride of mercury	3.00
Nitrate of silver	5.00
Hypochlorite of soda	9.00
Chlorine gas (freshly prepared aqueous solution)	10.00
Iodine	19.00
Bromine	24.00
Iodoform (when fresh)	28.00
Salicylic acid	40.00
Muriatic acid	100.00
Carbolic acid	128 00
Permanganate of Potash	140.00
Chlorate of Potash	158.00
Alum	180.00
Tannin	190.00
Common salt	196.00
Sulphide of calcium	201.00
Boracic acid	300.00
Sulphurous acid	325.00
Lactic acid	360.00
Perchloride of Iron	371.00

Concerning the so-called "Compound Oxygen treatment," I refer the profession to a report on: The Management of Pulmonary Diseases, by Karl von Ruck, B. S., M. D., Director of the Winyah Sanitarium for Diseases of the Throat and Lungs, Asheville, N. C., 1889. On pp. 8 and 9 of this publication, the author writes as follows:

"*Inhalation of Oxygen.*—Undoubtedly some benefit has been derived from such inhalations in anæmia and digestive derangements, also in certain forms of dyspnœa I have seen patients made much more comfortable after each inhalation, especially when a small quantity of nitrous oxide was added. I have also seen an occasional but undoubted increase in the number of red blood corpuscles under its administration, both in essential and symptomatic anæmia, especially when iron preparations which alone had proved inefficacious, could be administered at the same time. Its range of usefulness in consumption is secondary altogether to many other means, and it is only occasionally that anything more than temporary relief can thereby be given, and, no matter how plausible the theory as to its influence upon nutrition, practical experience shows that its use is always experimental, and frequently without result, the same as is the case in its employment in other diseases. Its mixture with nitrous oxide in the form of the so-called 'compound oxygen,' by the temporary stimulating or intoxicating effect of the laughing gas, has no effect whatever, except in dyspnœa, but it makes the patients who become the victims of charlatans feel that 'something powerful' is present in such inhalations, and induces them to believe in it more readily. This 'compound oxygen cure for consumption' still flourishes in many localities, the same as do the quack remedies for the same object upon the shelves and counters of our druggists, and I have no doubt the venders of such with their advertisements are as injurious parasites upon the consumptives as are the tubercle bacilli themselves; and while we must acknowledge that our efforts in phthiso-therapy against the latter have thus far been unavailing, many lives could undoubtedly be saved if the former could be extinguished by the enactment of wise laws which would oblige them to derive their means of livelihood otherwise than by trifling with human life."

Permanganate of potash, hypochlorite of soda, bichloride of mercury, the aqueous solution of chlorine gas, carbolic acid, nitrate of

silver, etc., destroy microbes, but, being toxic, corrosive and poisonous, they are dangerous to the patient's life.

It is worthy of note that Hydrozone is absolutely harmless, and yet it is more powerful as a bactericide than all other poisonous antiseptics, as it is proved by chemical and clinical tests. In addition to its powerful germicide properties, Hydrozone acts as a stimulant to healthy granulations, while other antiseptics constantly impair and even destroy our animal cells.

The comparative tests published on p. 14, show that Hydrozone is twice as strong as Marchand's H_2O_2 (medicinal), three times as powerful as bichloride of mercury, five times as powerful as nitrate of silver, ten times as powerful as iodine, twenty-eight times as powerful as iodoform, forty times as powerful as salicylic acid, 128 times as powerful as carbolic acid.

GLYCOZONE.

IMPORTANT INFORMATION.

Glycozone is a stable compound resulting from the chemical reaction that takes place when c. p. glycerine is submitted under special conditions, to the action of fifteen times its own volume of Ozone, under normal atmospheric pressure at a temperature of O° C. Its density is 1260 grammes.

The presence of water (and other impurities) in the glycerine, changes the nature of this reaction, so that instead of producing Glycozone, formic acid and other secondary compounds having deleterious effects upon animal cells, are obtained.

Glycozone being hydroscopic, must be tightly corked, so as to avoid being deteriorated by the moisture contained in the atmosphere.

Although Glycozone absorbs water readily, it does not deteriorate when kept at a temperature below 110 degrees F. As long as it retains its proper anhydrous condition, its healing properties increase with age.

The therapeutic properties of Glycozone and Hydrozone, differ in the following particulars:

Hydrozone instantly destroys the morbid element of diseased surfaces of the skin or of the mucous membrane with which it comes in contact, leaving the tissues beneath in a healthy condition.

Glycozone acts more slowly, but not less certain as a stimulant to healthy granulations. Its healing action upon diseased mucous membrane of the stomach is powerful and harmless in gastric and intestinal disorders.

Glycozone has a pleasant, sweet and acidulated taste, similar to the taste of lemonade made of lemon juice and a very small quantity of acetic acid.

Caution.—Glycozone is a peculiar chemical compound, and not a mixture of Peroxide of Hydrogen (medicinal) with Glycerine.

These two liquids when mixed do not form a stable product, but develop substances which are injurious to animal cells.

Such a mixture when freshly made has no healing properties similar to Glycozone. On the contrary, Glycozone is stable, harmless and always effective.

THE THERAPEUTICS OF GLYCOZONE.
COMPOSITION AND CHARACTERISTICS.

BY CYRUS EDSON, M. D.

Formerly Health Commissioner, Board of Health, New York City.

(Abstract from the *Times and Register*, Philadelphia, Pa., April 22, 1893.)

The writer states that Glycozone, like H_2O_2, is a powerful oxidizing agent, although its action is not as rapid or as energetic in this respect as the latter compound.

When taken into the mouth and stomach, Glycozone causes a feeling of warmth. It is harmless; in large doses, (one or two ounces) it causes a feeling of distress in the epigastrium; loose, copious, watery stools, with cramps may follow the administration of very large doses.

It has no ill effect on the kidneys, the liver or heart.

Dr. Edson states, that Glycozone is, in his opinion the best known agent for the treatment of gastric ulcer, and all inflammatory conditions of the alimentary canal.

He recommends the use of Glycozone diluted with water, as a beverage in diphtheria and membranous croup, depending upon the medicinal H_2O_2 as a local antiseptic treatment.

He further states, that remarkable benefit may be derived in ulceration and inflammation of the rectum and lower gut, by enemata

containing one ounce of Glycozone diluted with twelve ounces of warm water.

In cases of fistula-in-ano and of rectal ulcerations low down, it may be applied undiluted with the best results.

As a rule, Glycozone acts to better advantage, as a stimulant to healthy granulations, when it is applied to a diseased surface which has previously been cleansed and made aseptic by means of H_2O_2 (medicinal) or better still, by means of Hydrozone.

Follicular Pharyngitis, chronic coryza, and ulcerated stomatitis are all benefited by frequent applications of Glycozone. As an application to ulcerated cervix-uteri and in tumefied conditions of the cervix and uteri it is far superior to pure glycerine.

In these cases, and for the cure of leucorrhœa, the remedy should be applied on small rolls of lint, or absorbent cotton, the vagina having first been thoroughly washed with an injection of H_2O_2 (medicinal) one part, water four parts. Better results are obtained with Hydrozone one part, water eight parts. This procedure should be repeated twice daily.

GENERAL DIRECTIONS FOR USING AND APPLYING

HYDROZONE AND GLYCOZONE

IN DISEASES CHARACTERIZED BY THE PRESENCE OF PATHOGENIC GERMS.
NOSE, THROAT AND CHEST DISEASES.*

SEE P. 36, DIRECTIONS FOR USING THE HYDROZONE NASAL DOUCHE.

Catarrh of the Nose and Throat.—Causes.—Micro-organisms, principally of the micrococcus species have been detected by microscopic examinations, in the mucous discharges from the nostrils of persons afflicted with this disease. Hydrozone, by its oxidizing action restores the diseased tissues to their normal condition. See articles headed "Predisposition to Disease," p. 5, "Requirements of an Antiseptic," p. 7, "Essential Requirements of a Modern Antiseptic," by Dr. R. C. Kenner, p. 255.

Treatment.—By means of the "Hydrozone Nasal Douche," irrigate the nose and gargle copiously and repeatedly twice or three times every day with a mixture made of:

1 tablespoonful of Hydrozone
with 8 to 20 tablespoonfuls of water (lukewarm),

taking great care that the remedy should always pass through the post-nasal tubes and reach the throat. Dilute Hydrozone with lukewarm water, according to the degree of sensitiveness of the patient. Some patients may comfortably use a mixture made of one part Hydrozone with four parts of water while others cannot bear the remedy unless it is diluted in the proportion of one part of Hydrozone to thirty parts of lukewarm water. The strength of the above mixture should be regulated so as to suit each case.

As a rule, better results are obtained by using a large quantity of a weak mixture, rather than a small amount of a stronger mixture, especially in acute cases. It is always beneficial to swallow the remedy.

Do not blow the nose too hard, as it might cause a temporary bleeding, and remain indoors for fifteen minutes after irrigating the nostrils.

In chronic cases of long standing (especially when injurious drugs have been used) at the beginning of the treatment, the tenderness of the mucous membrane is so great, that the patient may feel during

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* Refer to treatise on "Diseases of the Ear, Nose and Throat and their Accessory Cavities," by Prof. Seth Scott Bishop, M. D., D. C. L., LL. D., of Chicago. Second edition, published by F. A. Davis Co., of Philadelphia, Pa.

one hour or so after irrigating the nose, a partial obstruction of either one of the nostrils.

This rather unpleasant feeling is often accompanied by frequent sneezing, which is due to the tickling sensation produced in the nasal cavities by the presence of a great quantity of minute bubbles of Ozone, being set free from the decomposition of Hydrozone coming in contact with the infected surface. The unhealthy secretions are destroyed and the cleansing of the nostrils is made perfect.

In chronic cases, where bronchial catarrh is present, also when the middle ear is involved, deafness may result from this disease. Then Ozonized vapor inhalations should follow immediately the irrigations of the nose, and should be administered by means of the "Hydrozone Nebulizer," (see p. 35) with a mixture thoroughly made of:

1 tablespoonful of Hydrozone,
1 " of water,
2 " of chemically pure glycerine.

In many cases better results will be obtained by using a mixture made of equal parts of Hydrozone and glycerine.

Shake well and renew the mixture every three days. The above mixture must be made perfect, before connecting the parts of the apparatus, otherwise the spray tube might clog on account of the syrupy nature of the glycerine.

A permanent cure may be accomplished in a very short time.

When chronic catarrh of the nose is tenacious and painful (especially, when the patient is troubled with a persistent dryness of the mucous membrane,) apply at night before retiring a few drops of Glycozone to the nostrils by means of a soft camel's hair brush. Sniff it gently, so as to force it through the post nasal cavities. Better results will be obtained by using the "Hydrozone Nasal Douche" for that purpose. The patient should not mind the temporary pain following the application of Glycozone, as it will accelerate the cure. At the same time it relieves the sensation of fullness, and owing to its osmotic properties, Glycozone subdues the dryness of the mucous membrane.

The incurability of chronic catarrh of the nose is frequently due to partial or even complete obstruction of the nasal cavities, caused by the presence of some abnormal growth.

When such is the case, use Hydrozone, as heretofore explained,

morning and evening, following by an application of Glycozone. After ten or fifteen days if the excrescence does not disappear, it may be advisable to have it removed by means of the thermo-cautery or otherwise. (No caustic should be used as it would destroy both taste and smell.) Then, an absolute cure will be accomplished if the above treatment is earnestly followed.

On p. 7, article headed "Requirements of an Antiseptic," the list of injurious drugs which are daily prescribed in catarrh is given.

These injurious drugs having a deadly action upon both the healthy tissues and the morbid element should be discarded as they do more harm than good.

On the contrary, Hydrozone destroys the morbid element and restores the diseased tissues to a healthy condition. It stimulates healthy granulations.

In acute cases, Dr. Robert T. Morris recommends the use of a 3 per cent. solution of cocaine before irrigating the nostrils with diluted H_2O_2 (medicinal) or Hydrozone, in order to quiet the smarting sensation. (See pp. 80, 153, 184, 215, 220, 232.)

OZÆNA, OR PUTRID CATARRH OF THE NOSE.

Ozæna is frequently the consequence of Catarrh having been treated for a long time by means of poisonous remedies. See article headed "Requirements of an Antiseptic," p. 7. It is characterized by ulceration of the nasal cavities with fetid discharge, symptom of atrophic rhinitis. It should be treated as follows.

By means of the "Hydrozone Nasal Douche" irrigate repeatedly the nostrils and gargle the throat morning and evening with a mixture made of:

1 tablespoonful of Hydrozone
with 6 to 10 tablespoonfuls of water (lukewarm).

It is only in case of extreme tenderness of the mucous membrane that a weaker mixture should be used as follows:

1 tablespoonful of Hydrozone
with 12 to 20 tablespoonfuls of water (lukewarm).

In case of necrosis, a small quantity of Hydrozone full strength should be applied, morning and evening to each nostril, by means of a camel's hair brush (free from metallic parts), until the vitality of the animal cells is restored. See article headed "Rhinolith or Nasal Calculus," by Dr. William H. Poole, p. 273.

In all cases of ozæna, by means of either a camel's hair brush, better still, by means of the "Hydrozone Nasal Douche," apply a few drops of Glycozone to each nostril, morning and evening, after douching. It will not only accelerate a cure, but it will subdue, or at least prevent the dryness of the mucous membrane from being so troublesome. The patient should always remain indoors for fifteen minutes after each irrigation.

The above treatment is so powerful, that the most offensive or rather repulsive odor which characterizes this peculiar disease, disappears three or four days after the first application. The dry crusts which adhere to the mucous membrane are loosened and destroyed without causing any injury to the tissues beneath.

A cure may be accomplished in three months. When the case is of a very long standing it requires more time to effect an absolute cure.

Sneezing and obstruction of the nostrils following each application of the remedy, may be subdued by applying Glycozone. See p. 18, article headed "Catarrh of the Nose."

HAY FEVER.—ROSE COLD.—CORYZA.

The microscopic examination of the unhealthy mucous secretions and excretions from the nostrils of Hay Fever sufferers demonstrates the presence of small ovoid micro-organisms, which are instantly annihilated when brought in contact with Hydrozone. See p. 5, "Predisposition to Disease,"—p. 8, "Rational Treatment of Diseases," p. 184, "New Therapeutics in Hay Fever," and p. 278 "Prevention of Hay Fever," by Dr. A. Rixa.

It is worthy of notice that the degree of susceptibility to the infectious action of these germs differs with each individual. The spores of the germs which characterize Hay Fever do not always find a proper soil for their development in the mucous secretions. Therefore they cannot enter into organic chemical combination which causes disease. This explains why all human beings are not troubled with Hay Fever.

The peculiarity of this disease is, that all people afflicted with Hay Fever, can foretell every year, almost to a certainty, the day upon which it will begin, and also the day upon which they will get rid of it.

The logical explanation of this is, that the conditions of life of Hay Fever sufferers are always the same; "that is, the circumstances

and surroundings of their existence are alike from year to year." Thus the microbian causes of the trouble developing under the same influences every year, at about the same time, the disease sets in as soon as the atmospheric conditions become favorable for the development of the spores I have mentioned. These spores grow, under special conditions of temperature and dampness, in the secretions of the mucous membranes of the nostrils, and the microbian infection takes place, to the detriment of the animal cells which are involved, producing inflammation and ulceration.

These micro-organisms continue their growth as long as the atmospheric conditions are favorable to their existence, while they disappear as soon as the temperature falls and remains at a lower degree. Then the effects disappear with their causes, and the patient gets rid of his trouble.

Treatment.—The causes of Hay Fever being now well established, it is easy to understand that any remedy having the property to restore the diseased tissues to their normal condition will interfere with the above mentioned chemical reaction and cure this disease, or at least subdue the acute symptoms, providing this remedy has no injurious effects upon the surrounding healthy tissues. See p. 7, "The Requirements of an Antiseptic."

In case of Hay Fever, with Hay Asthma, Hydrozone should be applied locally to the nostrils as a douche, and also by inhalations of ozonized vapor in order to subdue the asthmatic symptoms.

The Hydrozone treatment is based upon the indisputable results which are obtained when a Hay Fever patient goes to the White Mountains, (or to other "so-called" exempt places) where the atmospheric conditions are such that the air contains always a small quantity of damp Ozone. The constant breathing of this Ozonized atmosphere accomplishes the cure, or at least relieves the acute symptoms in a very short time as it prevents the germs from entering into organic chemical combination with the animal cells.

Hay Fever may always be prevented by an early application of Hydrozone (two weeks before the onset of the disease), in those cases which occur regularly at known periods of the summer.

When the disease has developed, the same treatment will check it within three or four days, the patient being made comfortable, but

he could not expect to be entirely free from his trouble. In all cases it is urgent to continue the treatment during the whole Hay Fever season, otherwise the sufferer will surely be troubled, even if he stops it for only twenty-four hours.

The best results are obtained as follows:

First.—By means of the "Hydrozone Nasal Douche," irrigate the nostrils and gargle copiously and repeatedly twice or three times every day with a mixture made of:

1 tablespoonful of Hydrozone
with 8 to 30 tablespoonfuls of water (lukewarm),

according to the degree of inflammation.

Some patients can use the remedy diluted with lukewarm water in the proportion of one to four, without discomfort, while others could not bear it, unless it is diluted with lukewarm water in the proportion of one to thirty. The strength of the mixture should be regulated, according to the degree of tenderness.

In acute cases, better results are obtained by repeatedly irrigating the nostrils with a large amount of a weak mixture, rather than a smaller quantity of a strong solution. Some Hay Fever sufferers are so sensitive, that even plain lukewarm water cannot be applied as a douche into the nostrils without causing excruciating pains.

Such an acute condition is usually present, when the patient has used (year after year) poisonous drugs.

In all cases, the patient must take great care, that the remedy is forced through the post-nasal cavities, and reaches the throat, at each douching.

Swallowing the remedy will do a great deal of good.

The unpleasant sensation of fullness (sometimes dryness) in the nostrils, which often follows each douching, can be subdued by applying Glycozone, as explained in the article headed "Catarrh of the Nose," p. 18.

Second.—When Hay Asthma exists, by means of the "Hydrozone Nebulizer," inhalations of Ozonized vapor should be administered with a mixture thoroughly made of:

1 tablespoonful of Hydrozone,
1 " of water,
2 " of chemically pure glycerine.

Shake well and renew the above mixture every three days.

The duration of each inhalation should not exceed ten minutes and should be taken three to six times daily. Inspirations should be as deep and prolonged as possible.

Note that I claim to prevent Hay Fever, but I don't claim to cure it. Therefore Hay Fever sufferers must resume the treatment every year, beginning at least two weeks before the onset of the disease. In this way the animal cells of the mucous membrane of the nostrils are made strong enough to resist the infection of the germs which will be either eliminated or neutralized as soon as they make their appearance. (See article headed "Predisposition to Disease," p. 5.)

When a Hay Fever patient has been fortunate enough to have used only harmless remedies to relieve his trouble, he will find immediate relief by following the above treatment. On the contrary, if he has used injurious drugs (for years) which have impaired or even destroyed the vitality of the animal cells, it may require one week or ten days before he feels relieved. See pp. 184—278.

In all cases a few drops of Glycozone should be applied to each nostril morning and evening by means of the "Hydrozone Nasal Douche," as it helps to subdue the dryness of the mucous membrane.

Itching and Inflammation of the Eyes.—Bathe the eyes copiously and repeatedly with a warm mixture made of one teaspoonful of Hydrozone with a tumblerful of lukewarm water. This treatment gives immediate relief.

See p. 52 article headed "Hydrozone and Eye Balsam in Inflammatory and Contagious Diseases of the Eyes."

Note.—In addition to the above local treatment of the air passages, it is urgent to subdue the inflammatory condition of the stomach, which may result from either the constant dropping of unhealthy secretions from the throat, or else from the action of injurious drugs, which have been used by the patient for years previous.

Therefore, in cases of gastric disorders, Hay Fever sufferers should follow the Hydrozone and Glycozone treatment as explained p. 38 article headed "The Rational Treatment of Gastric and Intestinal Disorders.

INFLUENZA.—LA GRIPPE.

Causes.—This disease is characterized by the presence of pathogenic germs which affect the respiratory organs and have a reflex action upon the nervous system.

The local symptoms are a severe naso-pharyngeal Catarrh with Headache, Sore Throat and Bronchitis.

The general symptoms are a feeling of lassitude, with acute pains in the limbs and back, accompanied with fever and profuse perspiration.

The stomach is also greatly congested and should be taken care of as explained on p. 38, "Rational Treatment of Gastric and Intestinal Disorders."

The internal medication with an appropriate diet may soon relieve the patient from the general symptoms, but the danger lies with the complications which either accompany or follow the Influenza, such as Laryngitis, Bronchitis, acute lobar Pneumonia, Pleurisy, etc.

In fact, the local symptoms, viz.: The inflammatory condition of the respiratory tract must be promptly checked in order to prevent the microbian infection from producing subsequent complications.

Hydrozone will always subdue the inflammatory condition of the respiratory organs, by strengthening the involved tissues.

Treatment of the Local Symptoms.—*First.*—By means of the "Hydrozone Nasal Douche," irrigate the nostrils copiously and repeatedly every three hours with a mixture made of:

1 tablespoonful of Hydrozone
with 8 to 10 tablespoonfuls of lukewarm water,

according to the sensitiveness of the mucous membrane.

Sore throat will be subdued by gargling with the above mixture.

Second.—In order to subdue the Bronchial Catarrh, by means of the "Hydrozone Nebulizer" administer Ozonized vapor inhalations three to six times every day with a mixture thoroughly made of:

1 tablespoonful of Hydrozone,
1 " of chemically pure glycerine.

Shake well and renew every three days.

The above treatment will not only check the local symptoms, but it will also prevent the patient from being subsequently troubled with chronic Bronchitis.

Treatment of Asthma.—By means of the "Hydrozone Nebulizer," inhalations of Ozonized vapor should be administered three to six times daily. See p. 35.

The action of Ozonized vapor upon the diseased surface of the bronchial tubes or the cells of the lungs is similar to the action of Hydrozone upon any open sore. The morbid element is destroyed or rendered inert by the "nascent oxygen" (near to the condition of Ozone) which is set free; the morbid element is destroyed, so that the diseased tissues are disinfected and restored to a healthy condition.

The bronchial trouble can easily be relieved, but unfortunately the remedy is powerless to subdue the nervous symptoms.

Therefore, although the patient may be much relieved, a permanent cure cannot be accomplished, on account of the nervous symptoms which cannot be controlled.

The mixture for inhalations, that gives the most satisfactory results is made of:

1 tablespoonful of Hydrozone,
1 " of chemically pure glycerine.

Mix well and renew every three days.

The duration of each inhalation should not exceed ten minutes, and after each inhalation, especially during the cold weather, the patient should remain indoors for fifteen or twenty minutes.

Owing to the fact that all asthmatic patients are more or less troubled with gastric disorders, it is of great benefit to prescribe half an hour before meals, half a tumblerful of Ozonized water made of:

1 ounce of Hydrozone
with 2 quarts of water.

This cleanses the stomach and regulates the bowels. The above treatment being earnestly followed will keep the patient free from Asthma, but the disease will reappear soon after he discontinues taking the Ozonized vapor inhalations.

See article headed "The Rational Treatment of Gastric and Intestinal Disorders," p. 38.

Bronchitis.—Treatment.—By means of the "Hydrozone Nebulizer" three inhalations of Ozonized vapor should be administered daily.

It is the most efficacious local treatment that can be prescribed to subdue this disease, on account of the harmless, although very powerful, antiseptic and healing properties of Hydrozone. (See p. 7.)

It quickly checks profuse bronchial secretions, and by its stimulating action upon the diseased tissues, an absolute cure may be accomplished in a very short time, especially if the patient has never used before any poisonous drugs.

Mixture for inhalations:

1 tablespoonful of Hydrozone,
1 " of water,
2 " of pure glycerine.

Mix well and renew every three days. In chronic cases it should be made of equal parts of Hydrozone and pure glycerine.

As a beverage, take half an hour before meals, half a tumblerful of Ozonized water made of:

1 ounce of Hydrozone
mixed with two quarts of water.

This will have the most beneficial effect upon the stomach, which is always affected by constant droppings of unhealthy excretions from the throat. See p. 38, "The Rational Treatment of Gastric and Intestinal Disorders."

In the majority of cases it is necessary to administer immediately after each meal 1 teaspoonful of Glycozone diluted with a wineglassful of water, in order to heal the local inflammation of the stomach.

Laryngitis.—Hydrozone is the safest and most powerful remedy to use in order to subdue this disease.

Irrigate the larynx or gargle three times every day with a mixture of:

1 tablespoonful of Hydrozone
with 4 to 12 tablespoonfuls of water (lukewarm).

Swallow a portion of the remedy.

Hoarseness which often follows or accompanies Laryngitis is promptly subdued by the same above treatment, in connection with Ozonized vapor inhalations. See p. 26, "Bronchitis."

Pharyngitis.—By means of the "Hydrozone Nasal Douche," irrigate copiously the pharynx morning and evening every day with a mixture made of:

1 tablespoonful of Hydrozone
with 6 to 14 tablespoonfuls of water (lukewarm).

Swallow a portion of the remedy and administer Ozonized vapor inhalations morning and evening, by means of the "Hydrozone Nebulizer." (See article headed "Bronchitis," p. 26.)

Croup, Membranous Croup.—This disease is characterized by the same specific virus as Diphtheria, although it shows a milder degree of virulence.

When fully developed, whitish spots or membranous exudations are observed in the larynx. After the membrane is once formed, if left alone it may be cast off in the form of a cylinder, in bands or shreds. Hydrozone loosens and destroys these membranes after a short contact, thus restoring the diseased tissues to a healthy condition.

In case of Membranous Croup, the nose, throat, mouth, pharynx and larynx, should be flooded every two hours with a mixture of:

1 tablespoonful of Hydrozone
with 8 to 20 tablespoonfuls of water (lukewarm).

The membranes are readily destroyed and their reproduction is checked. From that time there is no danger of suffocation resulting from the growth of these infected membranes. As an internal treatment, one teaspoonful of Glycozone diluted in a wineglassful of water, being administered three times a day will prevent any gastric disorder from taking place and it will regulate the bowels. When the stomach is seriously disturbed, alternate with Ozonized water as a beverage. See "Catarrh of the Stomach," p. 38.

Whooping-cough.—Causes.—Dr. Burger, of Bonn, Germany, and Dr. Affanassieff, of Russia, have shown the presence of micro-organisms in Whooping-cough sputum. Dr. Affanassieff has prepared, with all the precautions, for microscopical experimentation, a small portion of the expectoration of a Whooping-cough patient, which showed large numbers of short rod bacteria, partly singly, partly in two and of larger chains.

With pure cultures of these rod bacteria the investigator has made several inoculations upon animals. A solution of this culture upon agar-agar, at least eight days old, in one-half a cubic centimetre of common salt, was made and injected into the windpipe or lungs of dogs and rabbits, under antiseptic precautions.

The animals all contracted a disease similar to Whooping-cough, often complicated with Broncho-pneumonia.

Several died, and the autopsy showed that the mucous membranes of the bronchi, of the trachea, and even of the nose, are the chief seats of the injected bacteria.

The same bacteria were found in the lungs and the respiratory mucous membranes of children who died of Whooping-cough.

Dr. Affanassieff considers it to be a cause of Whooping-cough, and names it the "*bacillus tussis convulsivæ.*"

Hydrozone not only destroys these germs instantaneously, but it strengthens the tissues. Therefore it interferes with the organic chemical reaction mentioned, p. 5, "Predisposition to Disease."

Dr. Schwenker (London *Lancet*, January 7, 1888) and Dr. Wenat. (*Medical News*, June 2, 1888) have confirmed Dr. Affanassieff's observations.

Treatment.—*First.*—Irrigate frequently and copiously the nose, throat, pharynx and larynx with a mixture made of:

1 tablespoonful of Hydrozone
with 8 to 20 tablespoonfuls of water (lukewarm).

The patient may swallow the remedy without discomfort, as it is beneficial and perfectly harmless. Three or four applications every day will be sufficient to check the disease in most all cases.

Second.—By means of the "Hydrozone Nebulizer," administer Ozonized vapor inhalations three to six times daily, in order to destroy the morbid element which is present in the respiratory organs

The mixture for inhalations should be made of:

1 tablespoonful of Hydrozone,
1 " of water,
2 " of pure glycerine.

Mix well together and renew every three days.

The gastric disorder which always accompanies this disease may be subdued by administering half a tumblerful of Ozonized water, made of one ounce of Hydrozone with two quarts of water morning and evening. (See article headed "The Rational Treatment of Gastric and Intestinal Disorders," p. 38.)

Administer as a beverage, one teaspoonful of Glycozone diluted with water, whenever the patient feels thirsty.

Consumption, Phthisis, Tuberculosis of the Lungs.—Causes.—It is a well demonstrated fact that Consumption or Phthisis is characterized by the presence into the lungs of the Bacillus Tuberculosis of Koch.

With pure cultures of this bacillus, Dr. Koch and other bacteriologists have made experimental inoculations upon animals. A solution of this culture upon agar-agar was made and injected into the windpipe or lungs of dogs. The animals all contracted Tuberculosis of the lungs or Consumption. The bacillus locates itself in tubercles, producing ulcerated cavities of the lungs.

The bacillus tuberculosis is readily destroyed by antiseptic remedies; but although the annihilation of the microbian element is accomplished almost instantaneously by Hydrozone, this remedy could not cure consumption when the disease has reached such a degree of development that the lung tissue has broken down. If it should be possible to bring the remedy in contact with all parts of the lungs, which are invaded by the bacilli, undoubtedly the cure of consumption might be accomplished by Ozonized vapor inhalations.

Unfortunately, it is rather difficult, and often impossible to reach the seat of the disease, so as to prevent a chemical reaction from taking place when the germs and weakened animal cells remain in contact. See article headed "Predisposition to Disease," p. 5. Therefore, in the majority of cases, the patient could only expect to check the disease, preventing the microbian element from invading a new portion of the lungs, which is yet in a healthy condition.

The Ozonized vapor treatment will, in all cases, strengthen the animal cells of the lungs, and maintain their vitality to its normal condition, so that they may become strong enough to either neutralize or eliminate the vegetable cells (bacilli tuberculosis). At the same time it will supply the circulation with the necessary amount of nascent oxygen, in its most active condition.

The patient will derive a great deal more benefit from the Ozonized vapor when administered under pressure by connecting the "Hydrozone Nebulizer" with an air compressor cylinder. (See p. 35.) The large amount of Ozonized vapor that can be produced that way gives the most gratifying results.

Treatment.—By means of the "Hydrozone Nebulizer" (see p. 35), frequent and deep inhalations of Ozonized vapor should be administered three to six times daily with a mixture made of:

1 ounce of Hydrozone
with one ounce of chemically pure glycerine.

Shake well and renew the mixture every three days.

The duration of each inhalation should not exceed ten minutes, and inspirations should be as deep and prolonged as possible. The remedy will come in contact with the surface of the lungs that are accessible to the air.

The "Hydrozone Nebulizer" being connected with an air cylinder compressor gives much better results, than if it is worked by hand.

Remain indoors for twenty minutes after each inhalation, especially during the cold weather.

It is easy to understand that, the Ozonized vapor coming into contact with the ulcerated cavities of the lungs, the nascent oxygen near to the condition of Ozone, which is set free, oxidizes and neutralizes the morbid element, leaving the surrounding tissues in a healthy condition.

When Consumption has not developed beyond its first or even second stages—that is, when the ulcerated cavities are small and so located that they can be reached by the Ozonized vapor—the above treatment prevents the infection from spreading and a cure may be accomplished. In all cases of Consumption, no matter at what stage of the disease, the relief of the patient will quickly be obtained by using the Hydrozone treatment. It is the safest and most powerful treatment to stop and prevent hemorrhage of the lungs. (See p. 37.)

Ozonized vapor has no injurious action upon the healthy tissues of the lungs, while it acts as a powerful stimulant to healthy granulations.

Although the above local treatment will always help to check Tuberculosis of the lungs, the patient may grow weaker all the time, on account of his stomach being unable to digest a sufficient amount of substantial food. Therefore, in order to keep up his strength, the stomach should be taken care of as follows:

Half an hour before meals, administer half a tumblerful (or even a tumblerful) of Ozonized water made of:

1 ounce of Hydrozone with 2 quarts of water.

A small quantity of pure honey can be added to the Ozonized water so as to make it more palatable.

This will cleanse the stomach and destroy the morbid element.

Immediately after meals, administer two teaspoonfuls of Glycozone diluted with a wineglassful of water. The stomach will soon be brought to a healthy condition, and enabled to properly digest and assimilate a sufficient amount of substantial food, thus building up waste tissue. (See p. 38, "Rational Treatment of Gastric and Intestinal Disorders.")

INFLAMMATORY AND CONTAGIOUS DISEASES OF THE THROAT.

Sore Throat, Angina, Tonsillitis, Quinsy, etc.—Treatment.—Spray or gargle the throat copiously and frequently with a mixture made of:

1 tablespoonful of Hydrozone
with 6 to 12 tablespoonfuls of water (lukewarm).

The patient may swallow the remedy, as it is rather beneficial. In case of abscess of the tonsils, apply frequently Hydrozone full strength to the sore, by means of a camel's hair brush, so as to quickly destroy the pus which might cause both suffocation and general infection.

In addition to this, gargle every two hours with diluted Hydrozone.

Diphtheria.—Causes.—Diphtheria is at first a local disease (See p. 2), which is secondarily propagated to the general organism by a contagious virus located about the tonsils; this virus is an albuminoid substance invaded by a large number of bacteria called micrococci, (Klebs-Lœffler Bacilli).

Hydrozone acting upon this virus, both chemically and mechanically, changes its nature by coagulating the albumen; the germs are readily neutralized, the soil in which they develop being rendered inert and improper to their growth, their reproduction is checked. The surrounding healthy animal cells of which the vitality had been either weakened or destroyed, recover their strength under the stimulating action of this remedy, so that they are enabled to either eliminate or else resist the deadly action of the vegetable cells (germs).

Infection of the system by poisonous ptomaines is therefore prevented and the disease is localized. See article headed "Predisposition to Disease," p. 5.

When toxic or corrosive remedies are applied (See p. 7, "The Requirements of an Antiseptic") the germs are readily annihilated, but the surrounding healthy animal cells are also destroyed or at least much weakened, so that the patient may die, not from the disease (since the germs are destroyed) but from the effect of the poisonous drug.

Bichloride of mercury is surely the most dangerous antiseptic to use in the treatment of this disease.

Treatment.—Irrigate or gargle copiously, every two hours, the nose, throat, mouth, pharynx, and larynx with a mixture made of:

1 tablespoonful of Hydrozone
with 4 tablespoonfuls of water (lukewarm).

It is beneficial to swallow the remedy.

When Diphtheria has developed, spray the child's nostrils, throat, mouth, pharynx and larynx more frequently with a mixture of:

1 tablespoonful of Hydrozone
with 2 tablespoonfuls of water (lukewarm).

Dr. Geo. B. Hope, of the Metropolitan Throat Hospital, of New York, and other leading physicians, recommend the use of Hydrozone, full strength, particularly when the disease spreads rapidly.

The remedy may be applied full strength to the diphtheritic membranes by means of a soft camel's hair brush (free from any metallic parts).

Any portion of this remedy which finds its way into the larynx or stomach is beneficial rather than harmful.

Adults and children old enough to gargle and rinse the mouth will get a better effect in this way.

As an internal treatment one teaspoonful of Glycozone diluted in a wineglassful of water, administered every three hours, will prevent the microbian infection from causing gastric disturbances.

See pp. 73, 75, 76, 78, 83, 89, 90, 103, 104, 105, 112, 152, 196, 210, 218, 227, 232, 236, 255, 276, 285, 287.

Note, that small doses of calomel being administered will often prove to be beneficial, as it stimulates the liver, thus helping to eliminate the morbid element from the system.

Poisonous drugs, which are prescribed so indiscriminately in diphtheria, are causing more deaths than the disease itself.

Scarlet Fever.—Causes.—This disease is characterized by the presence of bacteria of the micrococcus species.

Every physician knows that Scarlet Fever is contagious to the highest degree, and that it may be communicated by anything that has touched the patient, such as air, food, clothing, sheets, furniture, curtains, etc. All discharges from bowels, kidneys, nose, mouth, eyes, ears, and skin are dangerous; and the poison may remain active for months or years by means of clothing packed away in drawers.

The germs which characterize this disease are readily neutralized or rendered inert by Hydrozone.

Treatment.—Spray the nose and gargle the throat copiously and repeatedly every two or three hours with a mixture made of:

1 tablespoonful of Hydrozone

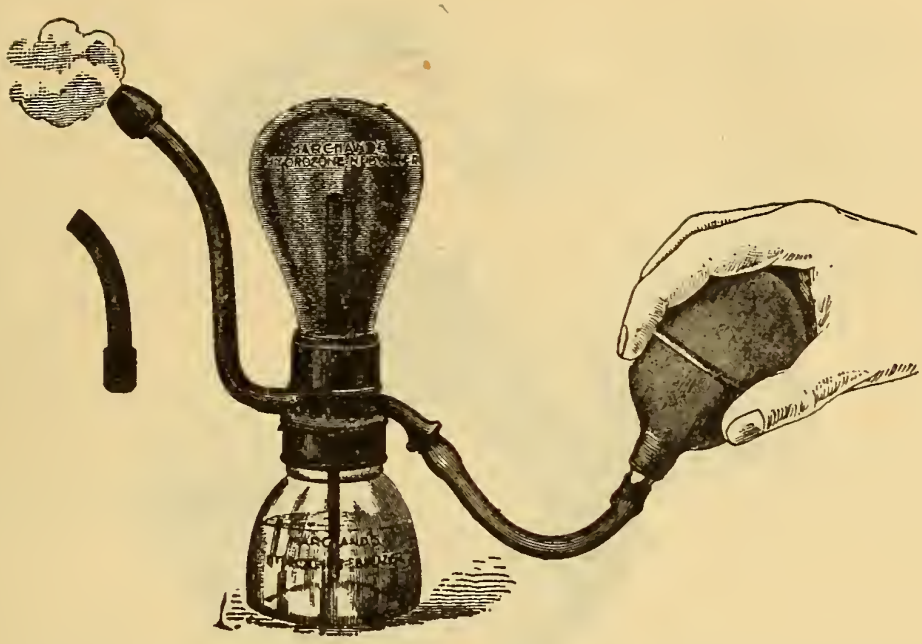
with 6 to 20 tablespoonfuls of water (lukewarm).

As a preventive for secondary infection: On the third day of Scarlet Fever, the whole body of the patient should be washed, morning and evening, with equal parts of Hydrozone and tepid water. Use a porcelain dish and a clean soft sponge.

This local treatment does not preclude the internal medication, which may be deemed necessary by the attending physician.

As an internal treatment: One teaspoonful of Glycozone diluted in a wineglassful of water, administered every three to four hours will prevent the microbian infection from causing gastric disorders.

See articles pp. 90, 104, 181.



The "Hydrozone Nebulizer" is made of three parts.

First.—The graduated glass bottle which is to contain the proper mixture for inhalations.

Second.—The spraying tube with attachments. (Hard Rubber.)

Third.—The Vaporizing Glass Globe.

The globe and the bottle are connected with the hard rubber spraying tube by screwing.

Directions for producing Ozonized Vapor Inhalations.

First.—Unscrew the glass bottle from the spraying tube and fill half full with a mixture of equal parts of Hydrozone and chemically pure glycerine, thoroughly mixed.

Second.—Reconnect the bottle with the apparatus. Then by quickly and repeatedly pressing the soft rubber bulb, the coarse spray which is produced in the vaporizing globe, strikes violently against the glass, breaking up into a fine vapor that escapes in a continuous flow through the bent nasal tip, as shown on cut.

The nasal tip can be taken off and replaced by throat tip as shown disconnected on the left hand side of the cut.

The liquid which condenses returns into the bottle, so that the same mixture can be used over and over again for three days when it must be replaced by a fresh mixture.

In cases of lung trouble, where a large amount of vapor is needed, better results will be obtained by connecting the "Hydrozone Nebulizer" with an air cylinder compressor.

NOTE.—Some practitioners believe that Hydrozone may be inhaled with good results by means of any ordinary inhaler, the same being placed in a jacket vessel of water heated to 120°—140° Fahr.

Others believe that by decomposing H_2O_2 by means of Permanganate of Potash, or other chemicals, they obtain nascent oxygen near to the condition of Ozone. This is absolutely wrong for the following reasons:

When Hydrozone is decomposed either by heat, or by any chemicals, oxygen (formula O) and none or but traces of Ozone are inhaled by the patient.

On the contrary, when Hydrozone vapor is produced by mechanical appliances, its decomposition into nascent oxygen (near to the condition of Ozone) takes place only when it comes in contact with the diseased surface, so that the maximum of its stimulating and healing properties is obtained.

DIRECTIONS FOR USING THE "HYDROZONE NASAL DOUCHE."

(Refer to Catarrh of the Nose and Throat, p. 18.)

1st. Fill the nasal douche with the proper mixture of Hydrozone with water. Warm the required amount of this mixture, before using, and keep the balance until all used.

2d. Close the filling end of the douche by placing the second finger of the right hand over the opening as shown in the above picture. Introduce the point of the douche into the nostril, and throw the head backward, allowing the mixture to run into the throat, then throw the head forward and let the solution run out. Do this repeatedly morning and evening, for each nostril and gargle as explained on page 32. Breathe, with the mouth wide open, while using the "Hydrozone Nasal Douche."

One "Hydrozone Nasal Douche" with one extra small size bottle of Hydrozone will be sent by mail, on receipt of M. O. for 50c.

HYDROZONE AS A HÆMOSTATIC IN SURGERY.
HOW BLOODLESS OPERATIONS CAN BE PERFORMED.

Hemorrhage, which is one of the causes that the most skillful surgeons cannot always perform operations with absolute accuracy, can be arrested almost abruptly.

Hemorrhage not only weakens the patient, but it may also eventually cause his death, by impairing his resisting power during the after treatment.

A Rational Hemostatic should answer the following requirements:

First.—It must coagulate the albumen of the blood into the involved capillaries and blood vessels so as to practically plug them.

Second.—It must be harmless to the patient (neither toxic nor corrosive).

Hydrozone full strength is the only Hæmostatic that answers the above requirements; besides this, it acts as a powerful antiseptic.

In order to obtain the best results, several rolls of either cotton or absorbent lint (not medicated) of a suitable dimension, soaked thoroughly with Hydrozone full strength, should be prepared before hand by the assistant and kept ready for the surgeon.

As soon as the incision is made, apply one roll to the wound, and hold it tightly in place for a minute or so. Then replace it quickly by a fresh one and so on, until the Hemorrhage is arrested.

I have personally arrested profuse Hemorrhage in less than three minutes by following the above method.

In abdominal surgery and laparotomy, the use of Hydrozone full strength as a Hemostatic is safe and effective, providing that the surgeon applies it as above explained.

Pouring Hydrozone into a cavity will never arrest Hemorrhage as quickly as it will, by following the method above described, while 90 per cent. of the preparation will be wasted.

Diluted Hydrozone is too weak to arrest Hemorrhage.

My experience in arresting Hemorrhage justifies me to state here, that "practically bloodless operations" can be performed that way, to the great satisfaction of skillful surgeons, and it requires very little practice to successfully carry out the above proceeding.

As soon as the bleeding is under control, wash out the wound with sterilized water or better still (especially in abdominal surgery and laparotomy) with a normal solution of Sodium Chloride.

Solutions of poisonous antiseptics, such as Bichloride of Mercury, Carbolic Acid, etc., being used for that purpose, might cause serious complications on account of the absorbing power of the tissues which has been considerably increased by the stimulating action of Hydrozone.

Therefore they should be strictly discarded.

Note that, at least 90 per cent. of deaths following surgical operations, are due to the use of either worthless, or else poisonous drugs as an after treatment. See page 7, "Requirements of an Antiseptic."

Slow recoveries are also due to the use of these drugs which greatly interfere with the healing process.

THE RATIONAL TREATMENT OF GASTRIC AND INTESTINAL DISORDERS.

INJURIOUS DRUGS SHOULD BE DISCARDED.

Digestion is a function by means of which, alimentary substances, (nitrogenous, non-nitrogenous and mineral) when introduced into the digestive canal, undergo different alterations, the result of which being to convert them into two parts; the one a reparatory juice, destined to renew the perpetual waste occurring in the economy; the other, deprived of its nutritious properties, to be rejected from the body.

This function, in man, is composed of eight organic actions, viz.: Prehension of food, mastication, insalivation, deglutition, action of the stomach, action of the small intestine, expulsion of the feces.

Digestion is really the result of a chemical reaction, which takes place as soon as the food is mixed with gastric juice, which is a fluid secreted from the mucous membrane of the stomach. The secretion of gastric juice is accomplished by the peptic glands, which are located in the cardiac end of the stomach.

Gastric juice, in man, contains, in every 1000 parts: water, 992.60; pepsin, 3.04; free hydrochloric acid, 2.20; alkaline chlorides, 2.00; phosphates of calcium, magnesium and iron, 0.16.

Dyspepsia.—Gastritis.—Predisposing Causes.——Deficient gastric juice secretion, with resulting fermentation of food, is the most prevalent cause of gastric disorders.

The two main constituents of gastric juice, namely, acid and pepsin, may be deficient in quantity or disturbed in their relative proportions. A certain amount of acid is essential to the digestive process, while a small amount of pepsin may be sufficient to digest a large amount of albuminoid food.

Exciting Causes.—Excess in eating and drinking, imperfect mastication and insalivation, the use of indigestible and unwholesome food, the abuse of alcohol, the imperfect arrangement of meals, over-drugging, or even the moderate use of injurious drugs, are chiefly the exciting causes of gastric disorders, indigestion being the immediate consequence.

Intestinal disorders, such as Constipation or Diarrhœa with Catarrhal Inflammation of the Bowels, are almost universal accompaniments of deranged digestion, and when persistent for years, are apt to lead to the most serious complications.

In fact, when the alimentary canal ceases to regularly accomplish its functions, the amount of substantial food which can be digested is insufficient to produce enough of the reparatory juice, which renews the perpetual waste occurring in the economy. Hence, the blood is impaired, some of its constituents being in deficiency, and the animal cells of the entire body become weak from lack of nutrition.

From that time the equilibrium is upset, and the individual's predisposition to disease increases. See article headed "Predisposition to Disease," p. 5.

Among the direct exciting causes of gastric disorders, corrosive and poisonous drugs, as well as the excessive use of alcohol, are recognized as being more prevalent than any others.

Chronic Catarrh of the nose, Catarrhal Bronchitis, may also cause gastric disturbances on account of the large amount of unhealthy secretions, which after developing in the post-nasal cavities, find their way into the stomach.

These unhealthy secretions produce not only a local irritation of the mucous membrane of the stomach, but they also prevent the peptic glands from accomplishing their work in the secretion of a sufficient quantity of gastric juice.

In cases of death resulting from Acute Gastritis, for instance, the autopsy shows that the mucous membrane of the stomach is covered

with a thick, tenacious, stringy mucous, which greatly interferes with the functions of the peptic glands.

The most prominent of the local symptoms of gastric disorders are: A sense of fullness and distention after eating, discomfort during digestion, lack of appetite and eructation, heart-burn, flatulence, regurgitation of food, and sometimes, in acute cases, nausea and vomiting.

Now, that I have briefly resumed the causes of gastric disorders, I will explain what I mean by the "Rational Treatment of Gastric and Intestinal Disorders."

The profession know that the innumerable remedies which are prescribed in stomach and intestinal diseases, may be classified as follows:

First.—Remedies having a stimulating action upon the secretion and muscular coats of the stomach.

Second.—Introduction into the stomach of a necessary amount of one or several of the constituents of the gastric juice, that may be in deficiency in order to make it normal.

Third.—Remedies having the property to lessen the abnormal irritability.

Fourth.—Remedies having the property to digest food, artificially.

Fifth.—Laxatives and cathartics.

The above mentioned remedies may temporarily relieve the symptoms, but owing to the fact that they have no healing action upon the inflamed mucous membrane, no cure whatever can be accomplished, unless nature is powerful enough to subdue the local inflammation by neutralizing the morbid element, and at the same time restoring the peptic glands to their normal condition.

Lavage of the stomach by means of the stomachal tube, may also give temporary relief, but it cannot always be resorted to, owing to the nervous condition of the patient. In fact it never accomplishes a cure, unless a harmless antiseptic solution is used. Hydrozone 1 for 50 of water gives wonderful results when the patient can bear it without much discomfort.

Assuming that a chemical analysis of the gastric juice (taken from the stomach of a patient) shows for instance, that muriatic acid is in

deficiency, it does not imply by any means, that by introducing into the stomach the amount of acid needed to make the gastric juice normal, the mucous membrane will be restored to a healthy condition.

When muriatic acid is in excess, the introduction into the stomach of an alkali may relieve heart-burn, but it will never accomplish a cure, while it may aggravate the trouble. For instance, if the quantity of alkali taken by the patient is in excess of what it should be, it will greatly interfere with the digestive process, since the gastric juice will be deprived of the amount of acid which is indispensable to digest food.

In cases of stomach disorders, the constituents of the gastric juice varying constantly in their respective proportions, it is impossible to always know to any degree of certainty, what amount of acid or alkali should be prescribed in order to make it just right.

Note, that the introduction of an excess of acid into a healthy stomach doesn't interfere with digestion. Vinegar, lemon juice, etc., have no injurious action upon a healthy mucous membrane, while they develop acute symptoms when the membrane is inflamed.

Gastric and intestinal disorders being due to an inflammatory condition of the lining of the stomach, must be treated by antiseptic remedies, having both a healing and stimulating action upon the diseased mucous membrane.

Remedies having a stimulating action upon the peptic glands, may also give temporary relief, but owing to their being poisonous, they always aggravate the trouble. Strychnine, for instance, which is prescribed so indiscriminately, is probably the most injurious of all the remedies that are used in stomach diseases. It compels the peptic glands to accomplish their functions while they are unfit to do so, until the usual dose fails to be powerful enough to produce the desired results. Then the patient is in a dreadful condition since he cannot get any more relief, while the mucous membrane of his stomach has been seriously injured by this drug.

Therefore, the rational treatment of gastric and intestinal disorders should be based upon the use of antiseptic remedies, answering the following requirements:

First.—Destroy the unhealthy mucous which covers the lining membrane of the stomach without injuring the surrounding healthy tissues.

Second.—Heal the diseased surface, by stimulating healthy granulations, so as to restore the functions of the peptic glands to their normal condition.

By referring to articles headed, "Requirements of an Antiseptic," p. 7, and "Rational Treatment of Diseases," p. 8, it will be readily understood that Hydrozone being administered before meals in the form of Ozonized water, will destroy the morbid element, and at the same time stimulate healthy granulations, but owing to its rapid decomposition into nascent oxygen and water, it merely cleanses the diseased mucous membrane.

Then, Glycozone being administered after meals, will act upon a clean surface, and owing to its wonderful healing and stimulating properties, a cure may be accomplished in a very short time.

The nervous symptoms, which often accompany Gastric Disorders, will be subdued under the Hydrozone and Glycozone treatment, while they always grow worse when poisonous drugs are prescribed.

See articles headed: "Diseases of the Alimentary Canal," by Dr. J. Osborne DeCourcy, p. 164,—"Chronic Gastritis with Periodic Attacks of Migraine," by Dr. Geo. A. Curriden, p. 222,—"Hydrozone in Gastric and Intestinal Disorders," by John Aulde, p. 224,—"Treatment of Inflammatory Diseases of the Stomach," by Dr. G. M. Blech, p. 225,—"Local Treatment of Chronic Gastric Catarrh," by Dr. J. M. G. Carter, p. 244,—"Mechanical Feeding of the Insane," by Dr. Frank C. Hoyt, p. 245,—"Chronic Gastritis," by Prof. H. T. Webster, p. 249,—"Glycozone in Chronic Catarrh of the Stomach," by Dr. J. W. Starr, p. 256,—"The Care of the Insane in Private Practice," by Dr. Henry W. Coe, p. 258,—"Hydrozone and Glycozone in Gastric Catarrh with Nervous Symptoms," by Dr. Warren E. Day, p. 259,—"Chronic Gastritis," by Dr. L. A. Kengla, p. 265,—"Chronic Catarrhal Gastritis," by Dr. A. Hamilton Deekens, p. 267,—"Acute Gastric Catarrh," by Dr. J. S. Moremen, p. 268,—"Treatment of Chronic Dyspepsia," by Dr. R. C. Kenner, p. 281,—"Chronic Dyspepsia Successfully Treated with H_2O_2," by Dr. Geo. A. Gilbert, p. 284,

—"The Uses of Hydrozone and Glycozone in Gastric and Intestinal Disturbances," by Dr. W. H. Vail, p. 286.

Directions for Using Hydrozone and Glycozone in Chronic Dyspepsia.—Gastritis and Gastric Ulcer.—

First.—Half an hour before meals, administer half a tumblerful (or more) of Ozonized water made of:

1 ounce of Hydrozone
with 2 quarts of water.

Take Ozonized water rather lukewarm than cold.

The patient may feel a distressing and sometimes very unpleasant sensation in the stomach for a few moments after drinking the above mixture.*

This is due to the decomposition (into nascent oxygen) of the Ozonized water, that takes place more or less rapidly according to the amount of unhealthy mucosities, and degree of inflammation.

When the inflammation is not acute and the amount of unhealthy secretions is small, nascent oxygen is set free rather slowly, so that the patient does not feel much discomfort.

On the contrary, when a large amount of unhealthy secretions is present, the mucous membrane being much inflamed, Ozonized water is decomposed almost instantly, and the large amount of nascent oxygen which is then suddenly liberated in the stomach, causes a distressing sensation which may even be accompanied with nausea. As soon as the stomach is restored to a more healthy condition, Ozonized water is taken without discomfort.†

No matter what discomfort results from drinking Ozonized water, in all chronic cases (particularly when the patient has used injurious drugs, which slowly, but constantly have aggravated his

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* The addition of a small quantity of pure honey to the Ozonized water does not interfere with the action of the remedy. Therefore when the stomach is exceedingly irritable better results are obtained with this mixture, which is not so objectionable to the patient.

† In acute cases of gastric disorders, where the lining mucous membrane of the stomach is so tender and irritable that the Ozonized water is rather unbearable to the patient, administer one teaspoonful of Glycozone diluted with half a tumblerful of water, half an hour before meals, and follow with two teaspoonfuls of same, diluted with a wineglassful of water, immediately after eating. The Ozonized water should be resumed, as soon as the patient can bear it without much discomfort.

trouble,) it should be taken, not only in view of cleansing and disinfecting the stomach, but also, in order to restore the vitality of the animal cells of the mucous membrane, to its normal condition.

When the life of the animal cells has been seriously impaired by the abuse of injurious drugs, although Hydrozone is the most powerful life giving and stimulating agent, it may require more or less time (according to the degree of injury caused by previous treatment) before the patient feels relieved.

Second.—The cleansing of the stomach being accomplished by the Ozonized water, the patient should drink immediately after meals:

1 to 2 teaspoonfuls of Glycozone
diluted with 1 wineglassful of water.

In this way, the healing action of Glycozone takes place upon a clean surface to better advantage.

The relief is almost immediate, and an absolute cure is soon obtained if the above treatment is earnestly followed, providing that other remedies are strictly discarded.

When Dyspepsia as well as Catarrh of the Stomach are not chronic, Glycozone alone, being taken immediately after meals as above explained, will soon accomplish a cure.

In all cases of stomach diseases, the patient should observe a careful diet, avoiding to eat unwholesome food, such as raw vegetables, acid fruits, pastry, starchy food, fried food, etc.; and he should take his meals regularly. He may eat all kinds of meat except pork and veal, also all kinds of cooked green vegetables except cabbage. Improper diet will interfere more or less with the healing properties of both Hydrozone and Glycozone. This treatment, which always prevents fermentation of food in the stomach, will cure the most acute and chronic cases of Dyspepsia and Gastritis, within two to six months, when all other remedies have failed.

Gastric Ulcer, (acute or chronic) which is characterized by vomiting of food and sometimes hemorrhage, is promptly subdued by following the same above treatment, with the exception, that the patient should drink one tumblerful of Ozonized water made of:

1 ounce of Hydrozone with 2 quarts of water,

(instead of half a tumblerful) half an hour before meals, and at least two teaspoonfuls of Glycozone diluted in a wineglassful of water

immediately after meals. In this way Glycozone will heal Gastric Ulcer much quicker than if it was administered alone, and the patient should not mind the unpleasant distressing sensation which always accompanies the use of Ozonized water, at first, as it will pass away as soon as the condition of the stomach has improved. See article headed "Dyspepsia," p. 43, also foot note.

A permanent cure of Gastric Ulcer may be accomplished in less than six months, if the above treatment is earnestly followed.

Small doses of Ozonized water, being administered at short intervals, will either arrest or prevent Gastric Hemorrhage almost instantly and it does away with the dangers of poisonous Hæmostatics, such as Perchloride of Iron, Ice, etc.

Indigestion, Vomiting in Pregnancy.—Treatment.—Take two teaspoonfuls of Glycozone, diluted with one wineglassful of water immediately after eating.

The relief is immediate and the digestion is accomplished without discomfort.

Inflammatory Diseases of the Intestines, Chronic Constipation, Diarrhœa, Cholera Infantum, Dysentery.—

Treatment.—Administer half a tumblerful of Ozonized water (one ounce of Hydrozone with two quarts of water) half an hour before meals, so as to thoroughly cleanse the stomach.

Then administer immediately after meals:

1 teaspoonful of Glycozone
diluted with 1 wineglassful of water.

In addition to this internal treatment prescribe every day an enema with:

1 ounce of Glycozone
diluted with 12 ounces of water (lukewarm).

Prepare this immediately before using, and administer it once daily by means of a hard rubber rectal fountain syringe. Retain the enema as long as comfortable.

The temporary discomfort which may follow the drinking of Ozonized water, may be avoided as explained on p. 43, foot note.

Note, that laxatives and cathartics should be used as little as possible because they invariably aggravate Constipation.

When hepatitis or inflammation of the liver exists, it is advisable to administer every 3 or 4 weeks, a dose of calomel at night (three hours after meal); then take a good dose of saline laxative the following morning. In most all cases a dose of 5 to 6 grains of calomel will be sufficient to stimulate the liver and it will help to accomplish a cure of the intestinal inflammation.

In acute cases of Dysentery and Cholera Infantum the bowels should be irrigated with half a pint to one pint of Ozonized water made of 1 ounce of Hydrozone for two quarts of lukewarm filtered water, once every day, see p. 52.

In acute cases of Diarrhœa and Dysentery, boiled rice and rice water should be prescribed, in addition to the Hydrozone and Glycozone treatment.

CONTAGIOUS DISEASES OF THE ALIMENTARY CANAL.

TYPHOID FEVER, TYPHUS, YELLOW FEVER, CHOLERA INFANTUM, ASIATIC CHOLERA.

Typhoid Fever.—Causes and Treatment.—It is a well-known fact that contaminated water is a cause of this disease.

Hydrozone destroys the Typhoid bacillus instantaneously. Consequently a beverage made of:

1 ounce of Hydrozone with two quarts of water,

alternating with a mixture of:

1 teaspoonful of Glycozone with 1 wineglassful of water,

will prevent the typhoid bacillus from entering into chemical combination with weakened animal cells. See article headed "Predisposition to Disease," p. 5.

It is the safest and most powerful antiseptic treatment, which always prevents septicæmia. Gastric Ulcer which so often follows Typhoid Fever (as a consequence of injurious drugs having been used) need not be feared when Hydrozone and Glycozone are the only prescribed antiseptic remedies.

This antiseptic medication does not preclude the general treatment.

The treatment of Yellow Fever, Cholera Infantum, and Asiatic Cholera is the same as above.

The following abstract of article by Dr. Elmer Lee contains full information in reference to the treatment of Typhoid Fever, and I am justified to state that as a preventive for this disease and for all

contagious diseases of the alimentary tract, Ozonized water administered internally, will always give the most satisfactory results.

TREATMENT OF TYPHOID FEVER.

By Dr. Elmer Lee, of New York.

(Abstract from the *Chicago Medical Recorder*, April, 1894.)

According to Dr. Elmer Lee the keynote of the treatment is cleanliness, external and internal. The value of cleanliness constitutes one of the greatest discoveries of the age in medicine, and has done more for therapeutics than all else. The important question in Typhoid Fever is how to save life; produced by contaminated water, there is elaborated in the intestine a poison, which if it could be removed in time, the life and health of the infected would be saved. Remaining, the poison is absorbed, and Typhoid Fever follows its course. Now, if at this time the poisonous matter and germs in the intestine can be neutralized by remedial measures or washed away, the disease will be checked and health will be restored.

The first thing to do in a suspected case of Typhoid, is to make the patient surgically clean by free use of water internally first, and externally afterwards. To do this the bowels are irrigated copiously with hot water, containing some vegetable liquid soap such as Elixo. This practice, gives the greatest of relief to the patient, and it is a delight to the physician. Some authorities fear that something may be ruptured by introducing into the intestine such large quantities of water, but, his experience shows that "the fear of doing harm may be entirely and forever dismissed." The procedure may at first be troublesome, but practice soon overcomes this, and the method will appear as easy as it is beneficial. The temperature of the water used for this purpose should vary with the temperature of the patient; if high, the best results will be secured by using cool water (about 75° F.), whereas if the patient be chilly or the temperature be low, the water should be heated to about 100° F. During the first week of Typhoid the irrigation should be used every morning and evening, after which only one irrigation should be practiced every day until convalescence. Bathing the body is important and should be performed at regular intervals; if the patient is strong enough, the bath tub should be used, but if not, sponging with cold water is grate-

ful, and reduces the temperature while it conserves the strength of the patient. The wet pack, accomplished by wrapping the patient in a wet sheet, is the most effective way of applying cold. He should be left in the pack from one-half hour to an hour, or longer, if he is comfortable. This measure not only reduces the temperature, but by opening the pores of the skin removes the waste products of the body.

The basis of the internal treatment is plenty of cold water to drink, which cools the body and assists it in the elimination of the poison produced by the bacteria. Dr. Lee says: "Let the sick have water, it can do no harm in any case; water only does good." To each tumblerful of water is added a half tablespoonful of Hydrozone, as it is the best and safest antiseptic remedy that can be given in this disease. This should be continued for a few days, and then Glycozone substituted. Glycozone is harmless and can be taken as freely as glycerine. It is best prescribed in teaspoonful doses, taken in a wine-glassful of water several times a day. To allay nervousness and induce sleep, from one-half to one grain of sulphate of codeine is given by the mouth, or one-quarter to one-half grain hypodermically.

Dr. Lee advocates the above treatment because of its simplicity, its rationality, and the fact that nearly every case is saved by it, when uncomplicated.

The treatment summed up in brief, consists in:

First.—Irrigation of the bowel with water, either simple, or made soapy with some pure liquid soap.

Second.—Frequent sponging with cold water, or the use of the wet pack.

Third.—Remedies: "Hydrozone and Glycozone, for the oxidizing effect of the nascent oxygen, which is set free in the alimentary tract. But to be of real value these remedies are to be taken in considerable quantities largely diluted with water; the capacity of the bowels is so great that a little of anything cannot spread over the enormous area to affect it beneficially. Cleanliness is the principle governing the use of Hydrozone and Glycozone." Codeine is the best remedy to soothe, and to induce sleep.

Fourth.—Foods: Milk is the best; milk and whipped eggs and pressed juice from broiled meat; the juice from ripe fresh fruit.

Nourishment should be taken regularly every four hours. Stimulants and drugs are believed by the author to be injurious without exception.

Dr. Lee says: "Typhoid Fever affects all cases, but if food and water were always pure, no class or age need contract the disease. Cleanliness everywhere and always is the means at hand which makes it possible to escape Typhoid Fever and other diseases of the bowels. Internal cleanliness as well as external is a reasonable proposition to hope for the cure of the unhappy multitude of sick and discouraged humanity."

See also articles headed: "H_2O_2 in Typhoid Fever," by Dr. F. H. Wiggin, p.100,—"The Treatment of Typhoid Fever," by Dr. M. A. Clark, p. 158,—"Diseases of the Alimentary Canal," by Dr. J. O. De Courcy, p. 164,—"The Requirements of a Modern Antiseptic," by Dr. R. C. Kenner, p. 255,—"Predisposition to Disease," p. 5.

H_2O_2 IN CONTAGIOUS DISEASES.

CHOLERA—YELLOW FEVER—TYPHUS—TYPHOID FEVER.

By Cyrus Edson, M. D., New York.

Formerly Commissioner of Health, Health Department, New York City.

(Abstract from *The Doctor of Hygiene* of New York City, April, 1893.

The writer emphasizes in a few words, the fact that we have in H_2O_2 a powerful antiseptic agent which may be administered without harm to the human system, and by means of which the alimentary tract can be more thoroughly disinfected than by any other agent in our present range of therapeutics. In other words there is no other antiseptic that will effect the amount of germ destruction in the alimentary tract without inflicting injury.

This is true for two reasons:

First.—H_2O_2 has no toxic properties and consequently may be administered in larger amounts than can the toxic antiseptics.

Second.—H_2O_2 ranks higher as a bactericide than does any other non-toxic agent, and indeed than do most of the toxic ones.

The elaborate reports made by such men as Paul Bert and Regniard, Baldy, Pean, Larrive and Gibier, prove these two facts as conclusively as they can be proven.

It logically follows that we have in H_2O_2 a curative agent from the use of which we may expect good results in cases of disease arising from germ infection of the stomach and bowels.

In this connection one fact must be borne in mind: H_2O_2 decomposes rapidly in the presence of organic compounds. We must consequently administer the drug rather freely in order to produce the best effects. Free irrigations of the lower intestines are devised and recommended by Dr. Elmer Lee, of New York, (*Medical Record*, December 17, 1892), so as to effect the greatest good.

In his paper Dr. Lee details the results of his experiments in the treatment of Asiatic Cholera at St. Petersburg last year, and he advocates the intestinal irrigation for the cure of the disease.

In addition to irrigation or washing out of the intestines, Dr. Lee administers internally Marchand's H_2O_2 (medicinal), two ounces diluted with eight ounces of distilled water, in cupful doses every two hours. The addition of distilled water is made in order to increase the bulk of fluid in the stomach.

It is the opinion of the writer, that this treatment will prove to be "par excellence" in Cholera Nostras, Dysentery, Typhus and Typhoid Fever.

In the latter disease H_2O_2 has already been used with beneficial results, administered by the mouth.

For Yellow Fever H_2O_2 must be considered a specific. Gibier has shown that this disease is characterized by the presence of micro-organisms in the intestinal tract.

The writer has used a solution of H_2O_2 (medicinal) for washing out the stomach through the syphon tube (lavage) in cases of Gastric Catarrh, with most excellent results.

The therapeutic range of H_2O_2 is daily enlarging; a comparatively new remedy, it has already won for itself a place in the foremost ranks of our really valuable medicinal agents.

The advance of medical science is necessarily slow, because it must follow in the wake of the development of allied sciences, upon which it depends for its resources.

Chemistry has only recently given us H_2O_2 (medicinal) in its pure form and to the efforts of Charles Marchand, of New York, more than to any other man, do we owe this invaluable remedy. A host of imitators have deluged the market with imitations, but the writer has found his preparation *facile princeps*.

NOTE.—Hydrozone will always give better results than Marchand's H_2O_2 (medicinal) on account of its being twice the strength of the Peroxide.

Yellow Fever.—According to the recent researches made by Dr. Paul Gibier, it seems to be a positive fact that Yellow Fever is characterized by the presence of bacteria in the intestines. This theory being supported by other prominent bacteriologists, the most logical treatment, in order to subdue this infectious disease, is to administer some laxatives in connection with antiseptic remedies.

The use of poisonous antiseptics as a rectal injection should be absolutely discarded. See article headed "Requirements of an Antiseptic, p. 7, and "The Rational Treatment of Diseases," p. 8.

Treatment.—By means of a hard rubber rectal fountain syringe administer enemas three times daily, with one pint of a mixture made of:

1 ounce of Hydrozone
with one quart of lukewarm water.

The patient should retain the enema as long as comfortable, and he must drink during the day, three or four tumblerfuls of Ozonized water, made of one ounce of Hydrozone diluted with two quarts of cold water, alternating with two tablespoonfuls of Glycozone diluted with half a tumblerful of water.

The internal administration of Ozonized water during an epidemic of Yellow Fever is the safest and most powerful preventive for this disease.

(See articles headed, Cholera—Prevention and Treatment, by Dr. Elmer Lee, p. 168,—The Rational Treatment of Gastric and Intestinal Disorders, p. 38.)

Cholera Infantum.—Dysentery.—These summer complaints which are characterized by the presence of pathogenic germs in the alimentary tract, heal rapidly under the Ozonized water and Glycozone treatment.

First.—Administer Ozonized water (made of one ounce of Hydrozone with two quarts of water) half an hour before meals in form of tablespoonful to wineglassful doses, depending upon age of child.

Second.—Administer Glycozone immediately after meals in the proportion of one teaspoonful diluted with a wineglassful of water.

In addition to the above local treatment of the stomach, an enema should be administered morning and evening with a mixture made of:

1 ounce of Glycozone, 1 pint of lukewarm water.

Alternate with enemas administered with half a pint of lukewarm ozonized water. The patient should retain the enema as long as comfortable. (See p. 45.)

The discomfort which may be experienced by the patient after drinking the Ozonized water is fully explained on p. 43, article headed Dyspepsia. (Foot note.)

The above treatment is safe and most effective in all cases.

In order to make Ozonized water more palatable, a small quantity of honey may be added to it before drinking.

See also pp. 193, 198, 258, 277.

HYDROZONE AND MARCHAND'S EYE BALSAM.

IN INFLAMMATORY AND CONTAGIOUS DISEASES OF THE EYE.

Marchand's Eye Balsam which is made of chemically pure Vegetable Glycerine combined with fifteen times its own volume of Ozone, is positively harmless, and its healing properties upon diseased tissues of the eyes are most powerful. See p. 290.

Catarrhal Conjunctivitis, or Ophthalmia.—Causes.—The profession well know that all forms of Conjunctivitis which are accompanied by secretion are characterized by the presence of germs which develop under more or less favorable circumstances, producing a local infection which is contagious to the highest degree.

The virulence of the contagion increases with the impurity of the atmosphere, and this disease is communicated by conveyance of secretion from one to another, by towels, handkerchiefs, etc., with a prodigious rapidity.

Besides a proper ventilation, it is necessary to isolate sick people, and also to keep them perfectly clean, in order to prevent the contagion; for instance, when any form of Conjunctivitis appears in a public institution, it is urgent to put all the affected persons apart from the healthy.

Numerous analyses which I have made in order to ascertain the nature of the remedies ordinarily prescribed in diseases of the eyes show that they are as follows:

Nitrate of Silver.—Sulphate of Zinc.—Sulphate of Copper.—Bichloride of Mercury.—Red Oxide of Mercury.—Calomel.—Carbolic Acid.—Alum.—Sugar of Lead.—Tannin.—Borax.—Boracic Acid.—Sulphate of Atropine.—Cocaine.—Rose Water.—Etc.

See articles headed: Predisposition to Disease, p. 5, Requirements of an Antiseptic, p. 7, Rational Treatment of Diseases, p. 8.

Although some of these remedies have a powerful destructive action upon the microbian element, such remedies should be condemned, owing to their corrosive and irritating properties. They always injure the cornea, and very often destroy not only the germs, but also weaken the optic nerves; for this reason their use proves more dangerous than the disease itself.

In fact poisonous antiseptics destroy both the germs and the healthy tissues with which they come into contact. They also weaken the vitality of the healthy animal cells beneath, so that the microbian element constantly finds a soil which is favorable to its development.

Tannin, borax, boracic acid and rose water are not injurious remedies, but their bactericide power is so feeble that they could not accomplish a cure.

On the contrary, Hydrozone not only destroys the morbid element but it restores the diseased tissues to their normal condition.

Marchand's Eye Balsam by its strengthening and healing properties makes the mucous membranes of the eye grow stronger daily.

Treatment.—*First.*—Bathe the eyes copiously and repeatedly with a mixture made of:

1 ounce of Hydrozone
with 2 quarts of water.

Use this mixture lukewarm. This will cleanse and disinfect the diseased surface, then by means of a glass dropper, apply to the inner portion of the eye, next to the nose, one or two drops of the Eye Balsam, every night before retiring, and the first thing in the morning.

If no dropper is at hand, apply the remedy with a soft camel's hair brush, dipped in the Eye Balsam, to the outer edge of the eye, with an outward motion of the brush, or it may be applied with the finger. In whatever manner Marchand's Eye Balsam is applied, it penetrates the inner surface of the eye by simply opening and shutting the eye repeatedly a few times.

At first it causes smarting, and even very severe pain for a few seconds, but it soon passes away.

Everybody knows, that owing to excessive tenderness of the mucous membrane of the eyes, the application of any remedy always causes a severe pain. Therefore the patient should know that if the application of the Eye Balsam is quite painful, the relief of his trouble is so promptly obtained, that he should not mind the pain.

Blepharitis Marginalis heals promptly under the same above treatment.

Purulent Conjunctivitis.—Ophthalmia Neonatorum, or Ophthalmia in Children.—The oculists well know that Ophthalmia Neonatorum, or Ophthalmia in children, is much more dangerous in its consequences than the Catarrhal Conjunctivitis.

This disease, which is the most frequent source of blindness in children, can always be cured if treated as follows.

First.—Bathe the eyelids repeatedly and copiously with a mixture made of :

1 ounce of Hydrozone
with 1 quart of lukewarm water.

This Ozonized water should be used three times, or at least morning and evening, every day.

Each cleansing should be immediately followed by the application of Marchand's Eye Balsam.

See article headed, H_2O_2 in Conjunctivitis, p. 162, also p. 290.

Granular Eyelids.—Same treatment as Catarrhal Conjunctivitis.

In all diseased conditions of the eyes, patients should expose themselves to air-draughts or bright light as little as possible, and the bowels should be kept open by a suitable internal medication.

Note, that when poisonous antiseptics have been used for a long time, the animal cells of the mucous membrane of the eyelids may have been so seriously injured that it requires more or less time until the Ozonized water and Eye Balsam treatment may restore their vitality to its normal condition, but in all cases the patient will promptly be relieved, and a cure will be accomplished, providing all other remedies are discarded.

HYDROZONE
IN INFLAMMATORY AND PURULENT DISEASES OF THE EAR.

Owing to its wonderful bactericide properties, Hydrozone is of great value in cases of obstinate chronic suppuration of the middle ear, especially in such cases where it is difficult to reach all the suppurating tract by any harmless local agent. See article headed "Requirements of an Antiseptic," p. 7.

The fact that it can be forced through the osseous sinuses without danger highly commends its value in these diseases.

Contrary to the assertion made by some practitioners, warm Hydrozone, even full strength, can be injected with perfect safety into the narrowest sinuses, providing that,

First.—The liquid should not be forced violently into the cavity.

Second.—The white foam which generates when Hydrozone comes in contact with pus and debris, should always find a free egress so as to avoid causing an abnormal pressure upon the tissues.

This can always be obtained by injecting slowly a few drops of the remedy at short intervals, until the cavity has been thoroughly cleansed.

As before stated on page 37, article headed "Hydrozone as a Hæmostatic in Surgery" when the cavity has been made thoroughly aseptic by means of H_2O_2, neither caustic nor corrosive drugs should be applied into the sore.

The bad results (that came to my knowledge) obtained in the treatment of suppurative diseases of the ear with H_2O_2 were merely due to the deadly action of the poisonous drugs which were applied to the sore as a local dressing after it had been thoroughly cleansed by repeated applications of H_2O_2 into the cavity.

While I was not surprised at the reports of such bad results, which were due to the action of poisonous drugs, I confess that it is rather wonderful that all the patients treated that way are still alive.

Therefore I strongly caution the medical profession against the dangers of applying poisonous drugs to any diseased surface after it has been cleansed by means of Hydrozone.

In case of profuse suppuration, the cleansing and destruction of pus should be made perfect by applying the remedy in the following manner :

Treatment.—By means of either a glass or a hard rubber syringe, inject repeatedly into the cavity, morning and evening, eight or ten drops of warm Hydrozone full strength. Let the remedy act during two or three minutes, then apply as a dressing, a small quantity of absorbent cotton well impregnated with Glycozone.

Two washings with Hydrozone, followed by two dressings with Glycozone, made every day, will cure the most obstinate chronic case in a very short time.

When the disease is not chronic, the suppuration being rather small, instead of applying Hydrozone full strength, it should be diluted with warm water, in the proportion of one ounce of Hydrozone with two ounces of water. It is urgent to always use warm Hydrozone into the ear.

The local dressing should always be made with pure Glycozone, as heretofore explained.

Wax in the ear can be removed as follows:

First.—Apply warm Hydrozone, drop by drop, into the ear. Let it bubble, and repeat the application three or four times every evening at bed time.

Second.—Apply Glycozone into the ear on a roll of cotton.

(See articles headed "H_2O_2 and its Uses in Ear Diseases," by Dr. Walter B. Johnson, p. 116,—"Wax in the Ear," by Dr. A. S. Tuckler, p. 99,—"Hydrozone in Purulent Otitis Media," by Dr. Wm. Clarence Boteler, p. 219,—"Diseases of the Ear," by Dr. Albert H. Buck, Abstract, p. 223,—"The Use of H_2O_2 in Diseases of the Nose, Throat and Ear," by Dr. W. Scheppegrell, p. 232,—"The Treatment of Chronic Suppuration of the Middle Ear," by Dr. Seth Scott Bishop, p. 257. Refer also to treatise on "Diseases of the Ear, Nose, Throat and their Accessory Cavities," by Prof. S. S. Bishop. Second edition, published by F. A. Davis Co., of Philadelphia Pa.,—"H_2O_2 in Mastoid Complications," by Dr. M. F. Weymann, p. 260, "Otitis," by Dr. Hugh Blake Williams, p. 279.)

HYDROZONE IN DENTAL SURGERY.

See articles headed "Dental Medicine," by R. M. Chase, D. D. S., M. D., p. 102,—"The Successful Treatment of Rigg's Disease," by H. E. Lewis, M. D., p. 188.

Owing to its wonderful bactericide properties, Hydrozone can be used without danger or risk of poisoning the patient, and yet it is the strongest bactericide and purifier known; it should always be used in order to cure promptly the dental diseases and Ulcerations of the Mouth, which are known to be characterized by the presence of pathogenic germs, such as, for example:

Alveolar Abscess and Abscess of the Inferior Maxilla.

Laceration, Inflammation and Ulceration of the Gums, Rigg's Disease, Stomatitis, etc.

Necrosis and Caries of the Teeth.

Dentists well know that the antiseptic agents used in the treatment of these diseases have been as follows :

Salicylic Acid.—Chloride of Zinc.—Nitrate of Silver.—Creosote.—Carbolic Acid.—Boric Acid, Etc. See Article headed "The Requirements of an Antiseptic," p. 7.

With the exception of boric acid, which is powerless to destroy the microbian element, the other above mentioned remedies are poisonous, and owing to their corrosive properties, the dentists cannot always limit their action to the affected parts.

Creosote and carbolic acid are most objectionable not only on account of their being injurious to the surrounding healthy tissues but also owing to their offensive odor. They should never be used.

On the contrary, Hydrozone is absolutely harmless, its odor and taste being rather pleasant than objectionable to the patient.

By its healing and stimulating properties, the diseased surface is made healthy and the surrounding tissues remain in their normal condition.

It has no destructive action upon the enamel of the teeth:

A tooth, being submitted for several days to the action of Hydrozone, full strength, remains intact, but it is bleached.

Hydrozone should never be made neutral before using. (See p. 11.)

Alveolar Abscess and Abscess of the Inferior Maxilla.—Abscess of the Antrum, Etc. Treatment.—When an Alveolar Abscess is caused by any constitutional derangement, internal medication would necessarily have to be prescribed.

The local treatment demanded is such as will destroy the accumulated pus.

At first the Abscess should be opened, then the cleansing and destruction of pus will be accomplished instantaneously, as follows:

By means of a silver, gold or platinum syringe, inject into the cavity morning and evening, a mixture of:

1 part of Hydrozone with 6 to 8 parts of water.

In case of Abscess of the Inferior Maxilla, where there is no free egress for the pus and debris, much more energetic treatment is required. Inject morning and evening a mixture of:

1 part of Hydrozone with 4 parts of water.

In chronic cases, especially in *Abscesses* of the *Antrum*, in order to prevent the sore from closing between two applications, floss silk, or absorbent cotton impregnated with Glycozone, should be thrust into the cavity immediately after each cleansing.

In addition to the above local treatment, the mouth should be kept clean by frequent and copious washings (especially after eating), with a mixture made of:

1 tablespoonful of Hydrozone
diluted in 1 tumblerful of tepid water.

By following this treatment, the diseased tissues become strong and healthy after one or two applications, and an absolute cure is accomplished in half the ordinary time.

Laceration, Inflammation and Ulceration of the Gums.—Stomatitis.—Hemorrhage of the Gums.—Hemorrhage of the Mouth.—Treatment.—Hydrozone is the most powerful remedy which may be applied in order to subdue these tenacious and painful affections.

It should be used freely and repeatedly as a mouth-wash, morning and evening, in the following proportion:

1 ounce of Hydrozone
diluted with 1 pint of water.

Rinse the mouth repeatedly, and retain the liquid for one minute or so at each washing. No injurious action whatever upon the enamel of the teeth need be feared.

The gums are strengthened by this treatment, healthy granulations develop rapidly, and an absolute cure is quickly effected.

When the above mentioned diseases are caused by constitutional derangement, an appropriate internal medication would necessarily be prescribed.

Necrosis and Caries of the Teeth.—Caries is a very common cause of Necrosis. Excessive medication, especially with mercury, will often produce partial, and occasionally, total Necrosis.

Dentists know that the most common agents that injure the teeth are originated in the mouth by the decomposition of animal and vegetable food.

Inflammation of the mucous membrane of the mouth is a common result of diseased teeth.

The Caries may be either constitutional or local; if constitutional, it may be modified by therapeutic treatment of the general system.

In all cases of Caries, the disease will always be checked by using frequently and copiously, as a tooth wash, a mixture of :

2 ounces of Hydrozone
with 1 pint of water.

Rinse the mouth well, at least morning and evening, and retain the liquid for one minute or so at each washing.

When the Caries is local, the above treatment may promptly accomplish a cure.

Dr. J. A. Whipple, Prof. of Anatomy, Northwestern College of Dental Surgery, of Chicago, recommends the use of Hydrozone to bleach discolored or devitalized teeth, in the following manner :

"In order to obtain the best results, saturate a small pledget of cotton in Hydrozone, place it in the cavity, and then turn on hot air, repeating until the desired shade is obtained."

Rigg's Disease.—Loosening of the teeth, characterizes this peculiar disease. Although all sorts of remedies have been used in Rigg's disease, still the dental profession acknowledge that they have failed to even relieve their patients of this trouble.

Hydrozone, by its healing and strengthening action upon the gums, quickly checks this trouble when applied at an early stage of the disease.

In that case the remedy should be used as a mouth wash morning and evening, also after eating in the proportion of :

2 ounces of Hydrozone
with 1 pint of water.

When the disease has developed, by means of a soft camels' hair brush, apply Hydrozone, full strength, to the gums, morning and evening and wash the mouth repeatedly, at least every three hours, also after each meal, with a mixture of :

4 ounces of Hydrozone
with 1 pint of water.

Rinse the mouth well, and retain the liquid for one minute or so at each washing.

The above treatment will accomplish an absolute cure of Rigg's disease in a very short time, if earnestly followed by the patient.

HYDROZONE AS A MOUTH AND TOOTH WASH.

By means of a medium hard tooth brush, scrub the teeth well and rinse the mouth repeatedly morning and evening with a mixture of :

1 tablespoonful of Hydrozone,
1 tumblerful of tepid water.

The mouth and teeth will be kept clean, the breath sweetened, and a pleasant and delightful effect produced.

Teething.—Dentition.—In order to either prevent or subdue the irritation produced by the pressure of the tooth on the superincumbent gum (sometimes causing Pyrexia, Convulsions, Diarrhœa, etc.), apply to the gums several times during the day, a mixture of:

1 part of Hydrozone,
4 parts of water.

It is safe and effective.

NOTE.—*Hemorrhage* following the extraction of a tooth, can be arrested almost instantly, by applying into the cavity a roll of cotton (not medicated), impregnated with pure Hydrozone. Hold it in place for a minute or so, by means of a hard rubber applicator. Then

replace the roll of cotton with a fresh one, and so on until bleeding ceases. Three or four applications will arrest hemorrhage, and it does away with the dangers of poisonous hæmostatics.

HYDROZONE IN CHRONIC AND ACUTE ULCERS.

Open Sores, Abscesses, Carbuncles, Cancerous Sores, Lupus, Burns, Syphilitic Sores, Chancres (Specific or not), Etc.—See the following reports of cases: "The Operative Treatment of Fistula-in-Ano," by Dr. Lewis H. Adler, Jr., p. 117,—"Wound Closure after the Empyema Operation," by Dr. Charles W. Aitkin, p. 106,—"H_2O_2 in Pelvic Abscess," *Bacteriological World*, editorial, p. 102,—"An Interesting Case of Empyema with Special Reference to the Use of H_2O_2," by Dr. H. F. Brownlee, p. 107,—"Treatment of Acute and Chronic Ulcers," by Dr. James Osborne DeCourcy, p. 155,—"A Resume of the History and Practical Application of H_2O_2 in Surgical Affections," by Dr. S. Potts Eagleton, p. 92,—"Some of the Uses of H_2O_2 in General Surgery," by Dr. Th. H. Manley, p. 118,—"The Etiology, Diagnosis and Treatment of Ulceration of the Rectum," by Dr. Joseph M. Mathews, p. 149,—"The Necessary H_2O_2," by Dr. Robert T. Morris, p. 80,—"The H_2O_2 (medicinal), an Indispensable Wound Sterilizer," by Dr. George H. Pierce, p. 114,—"Sinus Treated With H_2O_2," "*Practice*," editorial, p. 89,—"Intestinal Obstructions, Diagnosis and Treatment," by Dr. Frederick Holme Wiggin, p. 119,—"Pathology and Treatment of Indolent Ulcers," by Drs. P. N. Russell, G. H. Aiken and A. J. Pedlar, of Fresno, Cal., p. 243,—"A Case of Traumatic Synovitis of the Knee, Operation, Recovery," by Dr. H. C. Dalton, p. 246,—"A Case of Lupus of Six Years' Standing," by Dr. Truman Sexsmith, p. 254,—"Essential Requirements of a Modern Antiseptic," by Dr. Robert C. Kenner, p. 255,—"The Treatment of Chronic Suppuration of the Middle Ear," by Dr. Seth Scott Bishop, p. 257,—"H_2O_2 in Mastoid Complications," by Dr. M. F. Weyman, p. 260,—"An Ulcer Resulting From Anthrax, and Its Treatment," by Dr. J. Osborne DeCourcy, p. 262,—"Gun-Shot Wounds," by Dr. H. R. Chislett, p. 275,—"Senile Gangrene," by John A. Henning, M. D., p. 280.

Hydrozone is the most powerful pus destroyer and cleansing agent for pus discharging surfaces, for the instant it touches pus, Ozone is set free, effervescence takes place and continues until Hydrozone and

pus are both decomposed. Physicians may use this remedy with perfect safety, in abdominal surgery, to cleanse and sterilize the peritoneal cavity, as they will always meet with the most satisfactory results preventing blood poisoning after a surgical operation. See article headed "The Requirements of an Antiseptic," p. 7. Also "The Requirements of a Modern Antiseptic," by Dr. R. C. Kenner, p. 255.

Hydrozone and Glycozone are most successfully used in the treatment of all open sores, acute or chronic:

Open Boils, Open Abscesses, Phlegmonous Abscesses, Buboes, Mastoid Abscesses, Acute or Chronic Ulcers (syphilitic or not), Chancres, Scrofulous Sores, Piles, Fistula, Lupus, Cancerous Sores, Bed Sores, Gangrenous Sores, Broken Ampulla or Blisters, Burns, Aphthæ, Ulceration of the Mouth, Stomatitis, Rigg's Disease, Skin Diseases, Herpes Zoster or Zona, Ringworm, Psoriasis, Salt Rheum, Eczema, Ivy Poisoning, Itch and all other diseases characterized by the presence of pathogenic germs.

Treatment.—As a rule all open sores should be treated as follows:

First.—By means of a glass dropper or a camel's-hair brush apply Hydrozone to the sore, and take care not to remove the white foam that generates when it comes in contact with the diseased surface; let it remain until it disappears, which occurs in a few minutes.

Then by means of a camel's hair brush or otherwise, apply Glycozone to the sore and complete the dressing with a double thickness of surgical lint soaked in Glycozone. Cover the whole with oiled silk so as to prevent quick drying.

It is advisable to apply Hydrozone and Glycozone full strength, until the pus formation is checked, but in case of excessive tenderness Hydrozone may be used diluted with water, and Glycozone should be diluted with chemically pure glycerine.

When the discharge ceases being profuse, Hydrozone must always be used diluted with water, according to the nature of the discharge. Then Glycozone should be thoroughly mixed with chemically pure glycerine, in order to prevent the healthy granulations from forming too quickly.

The degree of dilution of Hydrozone and Glycozone should vary with the rapidity with which the healthy granulations develop.

In all cases cover the dressing with oiled silk.

Note, that although Glycozone deteriorates by absorbing the moisture of the air (the deterioration beginning to take place only after 24 hours) it gives wonderful results when applied as a dressing to a surface which has been previously cleansed and rendered aseptic by Hydrozone. Its healing action takes place before the water interferes. Healthy granulations develop quickly and the vitality of the surrounding tissues becomes strong enough to resist the destructive action of the vegetable cells (germs). In fact it prevents the organic chemical reaction mentioned on p. 5 from taking place.

Anthrax—Carbuncle.—This affection which is characterized by the presence of the bacillus anthracis, is at first a local disease which requires a most powerful antiseptic treatment as soon as the Carbuncle has been opened by a surgical operation.

The bacillus anthracis is readily neutralized or rendered inert by Hydrozone. See article headed "H_2O_2 and Ozone. Their Antiseptic Properties," by Dr. Paul Gibier, p. 81. Hydrozone being twice as powerful as Marchand's H_2O_2 (medicinal) its destructive action upon anthracis bacillus is twice as active.

Treatment.—Wash or irrigate the sore morning and evening with Hydrozone, full strength, taking great care that the liquid should be thrust into the discharging sinuses, so as to secure a thorough contact with the microbian element; the germs and the pus are destroyed, by the oxidizing action of the remedy, the cleansing and disinfection of the sore being perfect.

As a local dressing a double thickness of surgical lint should be soaked with Glycozone and applied to the sore. Cover the dressing with oiled silk. See article headed "Ulcer Resulting from Anthrax," by Dr. J. O. De Courcy, p. 262.

The above local treatment does not exclude the internal medication.

Cancerous Sores.—Gangrenous Sores.—Lupus.—Treatment.—When a Cancer has been thoroughly removed by the knife, (preferably by means of the thermo-cautery) an absolute cure of the wound may be accomplished by repeated applications, morning and evening of Hydrozone full strength, until the cleansing has been made perfect.

Then, as a local dressing, a double thickness of surgical lint should be soaked with Glycozone and applied to the sore. Cover the dressing with oiled silk.

Same treatment for Gangrenous Sores and Lupus.

When Cancerous Sores have been previously treated by means of injurious antiseptics, the life of the surrounding tissues may have been impaired to such an extent, that the Hydrozone and Glycozone can only give relief to the patient, and prevent the sore from becoming aggravated.

On the contrary, when Hydrozone and Glycozone are used exclusively from the beginning, a cure may be accomplished in a very short time.

The offensive odor which characterizes Cancerous Sores is quickly subdued by following the above treatment, and the patient is made comfortable. (See articles headed "H_2O_2 as a Deodorizer in Cancer of the Uterus," p. 109,—"A Case of Lupus of Six Years' Standing," by Dr. Truman Sexsmith, p. 254,—"Senile Gangrene," by Dr. J. A. Henning, p. 280.)

Empyema.—Collection of pus or other abnormal fluid in some cavity of the body, and particularly in that of the pleura, which is called Pleural Empyema, following Pleurisy, may be cured by the following treatment:

First.—Perform a small opening into the pleural cavity and allow the pus to run out.

Second.—By means of a double current hard rubber catheter, inject slowly into the cavity two ounces of Hydrozone (full strength). The gas (white foam) which generates, will find a free egress through the returning flow of the catheter.

When the accumulation of pus is great (sometimes 4 to 8 quarts), the Hydrozone should be injected twice at each dressing, so as to thoroughly destroy the pus, and at the same time, check its formation.

This being done, inject one or two ounces of Glycozone and insert a drainage tube (rubber tubing) into the opening. The patient will be relieved at once, and an absolute cure may be accomplished inside of two to four weeks.

No caustic or corrosive antiseptics should be used, as it might interfere with the cleansing and disinfecting properties of Hydrozone, also with the healing action of Glycozone. See articles headed, "Wound Closure After the Empyema Operation," by Dr. Chas. Aitkin, p. 106,—"An Interesting Case of Empyema," by Dr. H. F. Brownlee, p. 107.

ULCERATION OF THE RECTUM.—PHAGEDENIC CHANCRE.—FISTULA-IN-ANO.—PILES.

Ulceration of the Rectum.—When the Ulceration is external, a cure may be promptly accomplished by frequent and repeated applications of a mixture made of:

1 ounce of Hydrozone
with 4 to 8 ounces of water.

When the parts have been thoroughly cleansed and disinfected, apply at bed-time Glycozone on absorbent lint. Hold it in place by means of a towel tied around. Avoid scratching.

In cases of Ulceration of the lower gut, inject into the rectum two fluid ounces of the above mixture, retain it as long as comfortable.

Immediately after evacuation, administer a rectal injection with one ounce of pure Glycozone The above treatment is safe and at the same time more powerful than any medication which may be prescribed in order to subdue this troublesome disease.

Phagedenic Chancre of the Rectum.—Treatment.—The appropriate internal medication being prescribed by the attending physician, will help considerably to accomplish a cure of this disease.

As a local treatment, Hydrozone, full strength, should be applied repeatedly morning and evening, so as to cleanse the sore and render it aseptic, then apply a small quantity of Glycozone on absorbent lint and avoid all external causes of irritation.

Pruritus or Itching of the Rectum, resulting from either Diarrhœa or Constipation, can be subdued by applying diluted Hydrozone to the diseased surface, and Glycozone at bed time.

In addition to the local treatment the patient must follow the Hydrozone and Glycozone treatment as explained, article headed "Dyspepsia," p. 43.

Fistula-in-Ano.—Whatever may be the depth of the Fistula, and whatever may be the pain which accompanies the application of the remedy, Hydrozone, full strength, should be injected repeatedly morning and evening by means of a glass syringe, until the cleansing of the cavity is made perfect. Usually three injections administered at each dressing will be sufficient.

This being done, insert into the sore a roll of absorbent lint impregnated with pure Glycozone, so as to reach as near as possible the bottom of the cavity.

As soon as the healthy granulations begin to generate, apply Hydrozone diluted with water in the proportion of one ounce of Hydrozone with four ounces of water, because it is important that the sore should heal slowly.

See articles headed: "The Operative Treatment of Fistula-in-Ano," by Dr. Lewis H. Adler, Jr., p. 117,—"Abstract from a Treatise on the Diseases of the Rectum, Anus and Sigmoid Flexure," p. 118, —also "The Etiology, Diagnosis, and Treatment of Ulceration of the Rectum," by Dr. Joseph M. Mathews, p. 149.

Piles, (External.)—Treatment.—When piles are external, a prolonged bathing of the parts, being attended to, morning and evening, with a mixture made of one ounce of Hydrozone with four ounces of water, followed at bed time by an application of Glycozone, on a double thickness of absorbent lint; held in place by means of a towel, will accomplish promptly an absolute cure, providing the constipation (which is one of the causes of this disease) is subdued by a proper medication of the alimentary canal. Avoid scratching. See p. 43, article headed, Constipation.

Piles (Internal.)—By means of a hard rubber rectal syringe, inject into the rectum, one ounce of the above mixture of Hydrozone with water, morning and evening. Retain it for one minute, then inject one ounce of Glycozone and apply externally a double thickness of surgical lint, soaked with Glycozone. This should be attended to at bed time.

Hemorrhage will promptly be subdued by the above treatment.

See p. 233, article by Dr. M. F. Coomes,—also p. 13, Nasal Hemorrhage,—also p. 13.

Note that the abuse of cathartics and laxatives will in all cases aggravate the piles. (See p. 45, Constipation.)

THE RATIONAL TREATMENT
OF
ACUTE AND CHRONIC DISEASES OF THE GENITO-URINARY TRACT.

Inflammatory and suppurative diseases of the genito-urinary tract are always characterized by the presence (into either the urethra, vagina or uterus) of pathogenic germs.

The prolonged contact of germs with weakened animal cells of the mucous membrane, causes a morbid condition, which is accompanied with suppuration.

By referring to article headed Predisposition to Disease, p. 5, it will be readily understood, that all individuals are not equally predisposed to catch disease. It is only when the animal cells of the mucous membrane of the genito-urinary tract are weak, that is to say, when their vitality is impaired, that the microbian element may cause disease.

When the animal cells are strong and full of life, the pathogenic germs are readily neutralized or else driven away from the system, therefore no disease sets in.

When our animal cells are powerless to either neutralize or else drive away from the system the microbian element, antiseptic remedies must be resorted to, so as to help nature in its work.

The list of antiseptics, which are used in diseases of the genito-urinary tract, is given on p. 7.

On account of being injurious to healthy tissues, these drugs destroy both the pathogenic germs and the animal cells.

Therefore they may aggravate the disease by weakening slowly but constantly, the surrounding healthy tissues. In fact, they do fully as much harm as the microbian element itself.

I feel justified to repeat here, that whenever a patient recovers under the action of injurious drugs, "Nature has surely accomplished wonders," since she has been powerful enough to either eliminate or else neutralize both poisons, viz.: the toxines and the injurious drugs.

The rational treatment of suppurative and inflammatory diseases of the genito-urinary tract is based upon the use of a powerful antiseptic, answering certain requirements. See p. 7, article headed Requirements of an Antiseptic, where I explain that Hydrozone (30 volumes aqueous preserved solution of H_2O_2) which is always on a

strain to break up into water and Nascent Oxygen near to the condition of Ozone, is bound to fill all the requirements of a powerful and at the same time harmless antiseptic. It is the most powerful oxidizing agent known, and yet it is harmless.

GONORRHŒA.—GLEET.—URETHRITIS (SPECIFIC OR NOT,) ETC.

Treatment.—By means of either a glass or hard rubber pointed syringe, administer (morning, noon and night) injections with a mixture made of :

1 ounce of Hydrozone,
10 to 20 ounces of water,

according to the degree of sensitiveness and irritability of the urethra; retain the remedy into the urethra for a few seconds. In acute cases when the mucous membrane is exceedingly tender, reduce the strength to

1 ounce of Hydrozone,
30 ounces of water.

As a rule, in acute cases where the diseased mucous membrane of the urethra is exceedingly tender, better results will be obtained, by taking repeatedly several injections of a weak mixture of Hydrozone with water rather than one injection only with a stronger mixture.

In a female, the urethra being about one inch and a half long, (while in the male the urethra is from eight to ten inches long) one portion of the above mixture may find its way into the bladder, but it could not produce any pressure owing to the fact, that being very wide at its commencement, the urethra allows a free egress for the Nascent Oxygen gas which instantly generates when Hydrozone comes in contact with the unhealthy secretions.

In cases of Chronic Gonorrhœa or Gleet, in addition to the above treatment, the physician should prescribe one injection with Glycozone, (pure or diluted with C. P. Glycerine) immediately after using the Hydrozone.

In this way, Glycozone will act upon a clean surface, promoting healthy granulations and accelerate the cure.

The dangers of stricture resulting from the use of caustic and astringent drugs are avoided, when the above local treatment is earnestly followed.

The internal treatment should consist of anaphrodisiac remedies, such as, bromide of potassium, iodide of potassium, camphor and purgatives, as they help to accomplish a cure. Pure oil of Santal wood gives also the most gratifying results, especially in acute cases. Lithia water or lithia tablets being taken every day will neutralize the uric acid which always irritates the mucous membrane of the urethra.

All physical causes of local irritation, alcoholic and acid beverages should be strictly avoided.

Paraphimosis, which frequently exists in acute cases of gonorrhœa can be subdued in a very short time as follows:

Dip the parts into a mixture of Hydrozone 1 part, water 8 parts, for half an hour morning and evening. Apply Glycozone on absorbent lint at bed time.

When the urethra is exceedingly tender, in acute cases, each injection of diluted Hydrozone should be preceded by cocaine or ether for the purpose of quieting the smarting. See articles: "H_2O_2 in Gonorrhœa," by Dr. R. Charest, p. 77,—"H_2O_2 in Gynecology and in Obstetrics," by Dr. Egbert H. Grandin, p. 87,—"H_2O_2 in Chronic Gonorrhœa," by William Roberts, Hospital Steward, U. S. A., p. 108,—"H_2O_2 in Cancer of the Uterus," by Dr. Geo. W. Kaan, p. 109,—"H_2O_2 in Gonorrhœa with Report of a Case," by Dr. J. J. Sullivan, p. 133,—"Hydrozone for Disorders of the Genito-Urinary Tract," by Dr. John Aulde, p. 237,—"Essential Requirements of a Modern Antiseptic," by Dr. Robert C. Kenner, p. 255,—"Hydrozone and Glycozone in Gonorrhœa," by Dr. Warren E. Day, p. 264,—"Rapid Treatment of Chancroid and Ulcerative Syphilitic Lesions," by A. H. Ohmann-Dumesnil, p. 268,—"Hydrozone and Glycozone in Diseases of the Genito-Urinary Organs," by Dr. A. E. Neumeister, p. 270,—"Catheters and Cystitis," by Dr. R. N. Mayfield, p. 271,—"Puerperal Infection," by Dr. W. E. Bates, p. 277,—"Hydrozone in Chronic Urethritis," by Dr. John J. Harris, p. 283.

Chancres (specific or not) can be cured by applying Hydrozone (full strength or diluted) to the sore, following with Glycozone on absorbent lint, as a local dressing morning and evening.

Whites.—Leucorrhœa.—The Whites or Uterine Catarrh results from acute or chronic inflammation, or from irritation of the membrane lining the genital organs of the female.

Vaginal Leucorrhœa as well as Uterine Leucorrhœa are often attended with pain and a sense of heaviness in the back, loins, abdomen and thighs, with gastric and intestinal disorders. (See article headed "The Rational Treatment of Gastric and Intestinal Disorders," p. 38.)

All forms of Leucorrhœa require the local use of a powerful and at the same time harmless antiseptic. See article headed: "The Requirements of an Antiseptic," p. 7.

Astringent injections which are so often employed, especially when the discharge is profuse, cannot do any good, since they have no healing properties whatever upon the inflamed surface. They merely deceive the patient.

Poisonous antiseptics invariably aggravate the trouble by weakening the surrounding tissues. On the contrary Hydrozone by its stimulating and healing action upon the diseased mucous membrane, restores the tissues to a healthy condition and checks the discharge in a very short time.

The best results are obtained as follows:

Treatment.—By means of a suitable fountain syringe (free from metallic parts) vaginal douches should be administered morning and evening, with a mixture made of :

1 to 4 ounces of Hydrozone,
2 pints of warm water,

according to the amount and nature of the discharge.

When the discharge is profuse and its odor offensive, use as a douche a stronger mixture made of :

4 to 6 ounces of Hydrozone,
2 pints of water,

until the offensive odor disappears.

Clitoritis, or inflammation of the clitoris, which is so troublesome on account of the constant itching and burning sensation, may be promptly subdued by applying Hydrozone, full strength, to the parts, morning and evening, following with Glycozone. I mention this local affection, because when neglected, it may cause serious

vaginal disorders. If adhesions are present, of course they should be broken up.

Vaginitis.—Inflammation of the vagina accompanied with leucorrhœa, should be treated as above explained. (See article headed "Whites.")

In case of vaginitis granulosa, owing to the growth of papillary projections or pathogenic growths, on the surface of the membrane, administer douches morning and evening with diluted Hydrozone, (See article headed Whites,) then at night before retiring, a suitable pledget of prepared lamb's wool, which is tied around with a string (for easy withdrawal) being impregnated with Glycozone, should be introduced into the vagina.

Metritis.—Endometritis.—Ulceration of the Cervix Uteri.—Treatment.—Inflammation of the uterus either in its internal or external lining membrane, may be quickly relieved by vaginal douches administered with diluted Hydrozone, but in most all cases of endometritis, in addition to the vaginal douches, injections should be administered every day, into the uterus with a mixture made of :

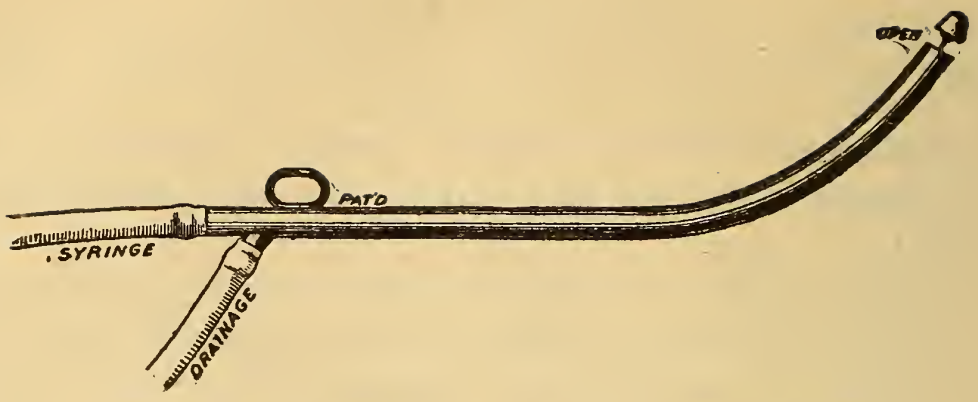
2 to 8 ounces of Hydrozone,
1 quart of warm water.

Vaginal douches with diluted Hydrozone, morning and evening, will keep the parts clean and restore the mucous membrane to a healthy condition.

At night apply Glycozone on a tampon as explained (See Vaginitis).

Caution.—Although in some cases an ordinary dilatation may be employed to distend the cervix, so as to permit a free egress of the nascent oxygen gas which generates when Hydrogen is injected into the uterine cavity—I strongly recommend the use of a double current hard rubber catheter, for that purpose.

Dr. Mayfield's double current irrigator answers this purpose. The Hydrozone entering the uterine cavity is quickly decomposed into nascent oxygen, the unhealthy secretions are readily destroyed, while the white foam and debris come out through the return flow.



This cut illustrates Mayfield's irrigator for uterine injections.

In this way, no abnormal pressure develops into the uterus, consequently, no morbid element can be forced through the Fallopian tubes into the peritoneal cavity, where it might cause uncontrollable disorders. Peritonitis in its most acute form would set in and cause the patient's death.

Cancer and Gangrene of the Uterus should be treated as explained at the article headed Metritis and Endometritis, p. 71.

As a deodorizer, in cancer of the uterus, Hydrozone, full strength, injected into the uterus, gives the most gratifying results, but owing to the fact that it cannot reach the seat of a malignant growth, a cure cannot be accomplished. See article headed: "H_2O_2 as a Deodorizer in Cancer of the Uterus," Dr. G. W. Kaan, p. 109.

In Chronic Endometritis and Uterine Ulcer, with accumulation of muco pus, Hydrozone being injected (into the uterus) full strength, accomplishes chemically a thorough cleansing of the internal lining membrane, and it does away with the dangers following the curettage of the uterus. The morbid element is destroyed by contact with Hydrozone and the surrounding healthy tissues remain intact.

On the contrary by curetting the uterus, the surgeon not only removes the muco pus and debris, but also some healthy tissues, leaving the surface beneath in a dreadful condition. Hæmorrhage and other complications are frequently due to the curettage of the uterus, while a cure is rather problematic. See articles: "H_2O_2 in Gynecology and Obstetrics," by Dr. Egbert H. Grandin, p. 87,— "Treatment of Vaginitis," by Dr. Hermann L. Collyer, p. 134,— "Chronic Cervical Endometritis," by Dr. Walter S. Wells, p. 171,—

"Local Treatment of Uterine and Vaginal Diseases," by Dr. W. C. Wile, p. 175,—"A Case of Protracted Labor," by Dr. J. N. Upshur, p. 228,—"Hydrozone for Disorders of the Genito-Urinary Tract," by Dr. John Aulde, p. 237,—"Essential Requirements of a Modern Antiseptic," by Dr. Robert C. Kenner, p. 255,—"Rapid Treatment of Chancroid and Ulcerative Syphilitic Lesions," by A. H. Ohmann-Dumesnil, p. 268,—"Hydrozone and Glycozone in Diseases of the Genito-Urinary Organs," by Dr. A. E. Neumeister, p. 270,—"Catheters and Cystitis," by Dr. R. N. Mayfield, p. 271,—"Puerperal Infection," by Dr. W. E. Bates, p. 277.

Note.—As a preventive for inflammatory and contagious diseases of the genito-urinary tract (either in the male or female) a thorough washing, followed by an injection (immediately after exposure) with a mixture of one ounce of Hydrozone to a pint of water, will cleanse the parts and destroy all germs instantaneously. No disease whatever need be feared when the above directions are followed. By coagulating the albuminoid medium which is necessary to the growth of all germs they are annihilated.

Pelvic Abscess.—Abscess of the Vagina.—Treatment.—In case of Pelvic Abscess and Abscess of the Vagina, the profuse suppuration following a surgical operation may be quickly subdued by injecting repeatedly into the sore Hydrozone full strength. The large amount of unhealthy secretions which are present in the vaginal cavity dilutes the Hydrozone so much that it is always advisable to use it full strength.

As soon as the discharge ceases being profuse, inject morning and evening a mixture made of :

1 to 4 ounces of Hydrozone,
16 ounces of warm water,

taking great care that the patient should be kept in a recumbent position.

When healthy granulations generate too quickly under the stimulating action of Hydrozone, use a still weaker solution.

After each cleansing of the sore, apply Glycozone on absorbent lint, as explained in the article headed Vaginitis, p. 71.

Fistula (Recto-Vaginal).—Treatment.—In chronic cases, especially when injurious antiseptics have been used, in order to restore the life of the animal cells to its normal condition, Hydrozone

full strength should be injected into the sore, no matter how painful it may be.

As soon as the diseased tissues assume a more healthy appearance inject into the cavity morning and evening, a weaker mixture made of:

1 ounce of Hydrozone,
4 to 8 ounces lukewarm water.

Complete the dressing by inserting into the cavity a roll of absorbent lint impregnated with Glycozone.

INFLAMMATORY AND SUPPURATIVE DISEASES OF THE BLADDER. PURULENT CYSTITIS, ETC.

Cystitis may be acute or chronic ; it is a Catarrhal Inflammation of the lining membrane of the bladder, accompanied with suppuration. In chronic cases, the internal membrane is coated with a thick deposit of dead mucous membrane.

In all cases of Cystitis, the patient should observe a careful diet, avoiding alcohol and acid beverages, also all other causes of local irritation, etc.

Antiseptic remedies should be resorted to, as a local treatment. Therefore, Hydrozone which readily destroys all morbid element, and at the same time stimulates healthy granulations, is indicated, and when used in time, it does away with complications, which so often accompany Cystitis, such as Gangrene of the Bladder, etc. See article headed "Requirements of an Antiseptic," p. 7.

The best results are obtained as follows :

Treatment.—By means of a double current hard rubber catheter, such as Dr. Mayfield's irrigator, irrigate the bladder morning and evening, with six to eight fluid ounces of a mixture made of :

1 ounce of Hydrozone,
1 pint (or more) of lukewarm water,

to which a small quantity of common salt can be added.

At the beginning of the treatment of Chronic Cystitis, half an ounce (or even one ounce) of Hydrozone full strength, should be injected into the bladder every day, using always a double current hard rubber catheter, so as to allow a free egress for the nascent oxygen gas which generates.

In cases of Urethritis, Acute Inflammation or Ulceration of the Bladder where the pain is acute, Dr. Robert T. Morris recom-

mends the use of cocaine or ether before the application of H_2O_2 or Hydrozone, for the purpose of quieting the smarting. (See articles headed, "The Necessary H_2O_2," by R. T. Morris, M. D., p. 80,—"H_2O_2 in Gynecology and in Obstetrics," by Dr. Egbert H. Grandin, p. 87,—"Hydrozone for Disorders of the Genito-Urinary Tract," by John Aulde, M. D., p. 237,—"Catheters and Cystitis," by Dr. R. N. Mayfield, p. 271.)

In addition to the above treatment a cure can be accomplished in a much shorter time by injecting once daily into the bladder (after it has been cleansed by Hydrozone) one ounce of Glycozone. Allow it to remain in the bladder.

The internal treatment for stomach and intestines should consist of Ozonized water and Glycozone. See p. 42.

The above remedies are the most powerful topical agents to use in order to subdue inflammatory diseases of the bladder.

Nephritis, Purulent Cystitis, Pyelitis are successfully treated by Ozonized water, alternating with large doses of Glycozone (half an ounce of Glycozone should be taken every three hours day and night in hopeless cases). See article headed "Suppurative Nephritis," by Dr. W. Peterson, p. 264, also p. 42, Gastric and Intestinal Disorders.

Diabetes can be checked and cured by following the Ozonized water and Glycozone treatment as explained in the article headed, Gastric and Intestinal Disorders, p. 42.

HYDROZONE AND GLYCOZONE IN SKIN DISEASES.

Eczema.—Psoriasis.—Salt Rheum.—Lupus.—Itch.—Barbers' Itch.—Erysipelas.—Sun Burn.—Ivy Poisoning.—Ring Worm.—Chilblains, Etc. (See articles headed, "H_2O_2 as a Local Application in Rhus Tox Poisoning," by Dr. N. H. Haight, p. 110,—"Poison Ivy," by R. M. Clark, M. D., p. 200,—"A Case of Lupus of Six Years' Standing," by Dr. Truman Sexsmith, p. 254.)

In reference to Poisoning Ivy, Dr. John Aulde, of Philadelphia, Pa., writes as follows in the *Alkaloidal Clinic*, of Chicago, for September, 1897.

"There has long existed an urgent demand for an antidote to the effects of Rhus, the usual remedies being extremely unsatisfactory We have in Hydrozone an exceptionally successful remedy for the

relief of Rhus Poisoning, a single application being sufficient to convince the most skeptical. It should be applied freely at intervals of two to four hours; and usually in less than twenty-four hours the inflammation will be fully under control.

What a comfort this news will be to the bicycle riders throughout the country. It is safe, it is effective and it is prompt."

Dr. C. E. Ehinger, of the State Normal School of Pa., writes as follows: (October 21, 1897.)

"I have just used Hydrozone with the greatest success in a case of Ivy Poisoning. It checked the eruption at once and prevented it from spreading where it had already commenced."

The best results are obtained in skin diseases by applying Hydrozone and Glycozone as follows:

First.—Wash the surface with a solution of borax, made of one ounce of borax for one pint of lukewarm water.

Second.—By means of a soft camel's hair brush, or spraying apparatus made of hard rubber and glass, apply to the diseased surface, Hydrozone full strength, and let it dry. When it is dry repeat the application of the remedy until the amount of white foam which generates is relatively small.

As soon as the surface is dry, rub over it gently with Glycozone. Avoid scratching and cover the parts with lint soaked with Glycozone.

Two dressings made morning and evening will promptly accomplish a cure.

When the disease is due to constitutional disorders, such as specific disease of the blood, a proper internal medication should be prescribed.

In cases of **Erysipelas** the internal treatment should be prescribed by the attending physician in order to subdue the fever.

In cases of **Psoriasis** and **Salt Rheum,** the above described local treatment being earnestly observed, the attending physician should prescribe the Ozonized water and Glycozone treatment, so as to subdue the gastric disorder which always accompanies these diseases. See "Rational Treatment of Gastric and Intestinal Disorders" p. 38.

Herpes Zoster or Zona.—Ringworm.—When the diseased surface is exceedingly tender apply Hydrozone diluted with water half

and half, until the acute state is subdued, following with pure Glycozone. After four or five days the itching generally disappears. From that time use both Hydrozone and Glycozone full strength. An absolute cure may be accomplished inside of three to six weeks.

Acne, Pimples on the Face.—Whatever may be the cause of this disease (if it is due to constitutional derangement or not) which is always accompanied with impaired digestion, it should be treated locally as follows:

First.—By means of a sharp needle, open each pimple, and avoid squeezing.

Second.—Apply Hydrozone full strength or diluted with water half and half, according to the degree of sensitiveness. Allow the white foam which generates to disappear.

Third.—Rub gently over the surface Glycozone.

When the disease is constitutional, an appropriate internal medication must be prescribed by the attending physician.

The gastric and intestinal disorders should be treated as explained on p. 38, article headed "Gastric and Intestinal Disorders."

Note that in all cases of skin diseases, the surface assumes a dark red appearance after each application of Hydrozone and Glycozone. This is due to the stimulating action upon healthy tissues, but there is no danger whatever of producing irritation.

Hydrozone should be used, diluted with water (more or less) only when the diseased surface is unusually tender.

Freckles and Moth Patches can be removed as follows:

First.—Apply to the colored surface a solution of borax, made of one ounce of borax to one quart of water. Allow it to dry.

Second.—By means of a soft camel's hair brush, (free from metallic parts) apply repeatedly to the spot Hydrozone, full strength, allowing it to dry between each application. It causes an itching sensation which soon passes away.

Third.—As soon as the skin is dry, rub over it gently with Glycozone.

The above treatment must be repeated daily morning and evening until the skin has assumed its normal color. From that time apply Hydrozone and Glycozone once or twice every week, otherwise the trouble will surely return.

Chapped Hands.—Chilblains can be quickly cured by a few applications of Glycozone at night. Rub well and cover with linen.

Dandruff can be removed by repeated applications of Glycozone to the scalp after it has been thoroughly cleansed with a solution of borax. Rinse well with lukewarm water.

It prevents the hair from falling off by keeping the scalp in a healthy condition.

Note.—Owing to the fact that Hydrozone being applied to the scalp would bleach the hair, Glycozone alone should be used in the treatment of all diseases of the scalp.

OPINION OF THE MEDICAL PROFESSION.

SOME CLINICAL FEATURES OF DIPHTHERIA AND THE TREATMENT BY PEROXIDE OF HYDROGEN.

By GEORGE B. HOPE, M. D., New York.

Surgeon Metropolitan Throat Hospital; Professor Diseases of Throat, University of Vermont.

(Extract from the *New York Medical Record*, October 13, 1888.)

The sentiment, so long divided, with regard to the constitutional or local inception of diphtheria, seems to be now almost universal in the direction of the latter theory. Consequently, in the light of this opinion, it is clear that the rational treatment must rest more on the recognition of some local agent which will surely destroy the specific germ before a full development of the constitutional infection is reached, rather than on any system of general medication which might be presumed to act more or less as an antidote in combatting the septic influences occurring in the course of the disease. . . . .

On account of their poisonous or irritant nature, the active germicides have a utility limited particularly to surface or open-wound applications, and their free use in reaching diphtheritic formations in the mouth or throat, particularly in children, is unfortunately not within the ranges of systematic treatment. In Peroxide of Hydrogen, however, it is confidently believed will be found, if not a specific, at least the most efficient topical agent in destroying the contagious element and limiting the spread of its formation, and at the same time a remedy which may be employed in the most thorough manner without dread of procuring any vicious constitutional effect. Although the Peroxide is by no means of recent date, its medicinal value has been chiefly confined to the cleansing of foul ulcers and suppurating wounds, and there is hardly more than a casual mention of its utility in the treatment of diphtheria previous to a paper of Dr. Mount Bleyer on this subject.* Quite independently of these observations, somewhat over eighteen months since, at the Metropolitan Throat Hospital, several cases of well-marked buccal diphtheria were treated with the Peroxide, with the effect of confirming in the most satisfactory manner the results obtained by Dr. Bleyer. The report of these cases was consequently omitted, pending the experiences it was supposed others would be quick to furnish on a more extended scale of the new remedy so warmly advocated. Among the somewhat small number of trial cases which have appeared at various times in the medical press, there

* *The Medical Record*, August 13, 1887

are none in which a distinctly negative opinion is expressed, and where only a partially satisfactory result is attained there has appeared to be sufficient cause to permit reasonable explanation for the fact. . . . .

A further explanation for the uncertain results attending the use of the Peroxide lies in the direction of the preparation itself, as also in the manner of its topical application. The usual descriptions allow the diluted strength of from three to seven volumes of distilled water. Inasmuch as the efficacy depends upon the ozonized oxygen in solution, it has seemed desirable to rely on the full strength of the officinal preparation of fifteen volumes, especially when used in the fauces, where any slight irritation from its acidity is not apparent. In all the cases treated, a fresh, standard Marchand's preparation of fifteen volumes was that on which the experience of the writer has been based. An equally important element is in making the application in such a manner as to produce the most determined effect on the diseased tissues with as little local disturbances as possible. Swabbing the tonsils and pharynx is the rough and ready method commonly resorted to, with the second motive of detaching, if possible, the membranous formation. Such treatment is not only unnecessarily harsh toward the patient, but also in intrinsic efficacy falls far short in securing the best therapeutic value of the remedy. It is properly recognized that the removal of the membrane, unless it occurs spontaneously, is not favorable to the local conditions; moreover, the glary mucous coating of the surface does not permit the application to come fairly in contact with the disease, or so superficially as to require the most constant repetition. The latter criticism holds the same bearing, only modified in a degree, to the hand-ball vapor and spray-producing instruments that have been recommended.

A steady, coarse spray, with an air-pressure of twenty pounds or more, will in a few moments' time produce a more positive action than prolonged efforts to reach the fauces by means of cotton applicators. The force of the spray should be sufficient to cleanse at once the surface accumulations, as to destroy the necrosial elements with which it comes in contact. In this manner the removal of the *debris* and the action on the deeper structure go hand in hand.

It will be noticed that immediately on contact with the Peroxide, a white, cloudy coagulum is formed on and about the diphtheritic patches, readily floated off and exposing a more sharply defined and a flatter, smooth and whiter base. Properly speaking, there is no liquefaction of the exudation, but the decomposition of the inflammatory products is so complete that the cells are broken up and freed from the entangling fibrous net-work beneath. In a particular instance, in the case of apparently a continuous diphtheritic slough, involving the tonsils and extending in an unbroken line across the margin of the soft palate, a solitary application exhibited this effect in such a degree that the natural color of the mucous membrane appeared in spots as if the exudation might have bridged across sound tissue without as yet securing attachment to the sub-epithelial layers.

How frequently the treatment is to be followed up depends to a considerable extend on the density as well as the era of the surface involved. It may be said, however, that two applications a day, in the great majority of cases, should be sufficient, if thoroughly performed, to arrest all danger of extension and accomplish the gradual resolution of the local formation.

If the experience of the writer is confirmed, it is apparent how much time, trouble and unnecessary handling is obviated when contrasted with the methods outlining hourly or half-hourly swabbing, or, as one has more frankly expressed it, "scrubbing," with nauseating applications, and culminating in the exhaustion of the patient, if not the most indifferent success. No reasonable objection can be raised either on the score of the expense or the difficulty of transporting the apparatus necessary, as small portable air-receivers can be readily obtained in the instrument shops, on the model of those devised by Codman & Shurtleff, of Boston, and which for the purpose are equally efficient as the larger stationary office fixtures.

The more recent experience of Dr. Gifford (the *Medical Record*, September 1, 1888), establishing the active germicidal properties of Peroxide of Hydrogen, rapidly diminishing in proportion to its dilution in what might be called a geometrical ratio, appears to emphasize in a marked degree the clinical observations on which the main features relating to its employment have been based.

SOME PRACTICAL HINTS IN CONNECTION WITH INTUBATION OF THE LARYNX, AND A RESUME OF 206 CASES OF DIPHTHERIA OPERATED ON FROM 1886 TO 1888.

By J. MOUNT BLEYER, M. D.

New York Medical Journal, February 2, 1888.

(*Extract.*)

. . . . *Irrigation.*—This is an admirable method of washing away the products of the local lesion. I used a No. 8 soft-rubber catheter which is attached to a fountain-bag syringe; the catheter is passed into the nostrils, first the right and then the left. The solution which is used is made by taking Peroxide of Hydrogen (Charles Marchand's), fifteen volume solution, chemically pure, one ounce to twelve ounces of water. With this solution irrigate each nostril thoroughly. After this has been done, the next move is to wash out the mouth, pharynx and larynx. If the child can be managed without forcing the mouth open, there is no need of the insertion of a gag; but if not use it. The patient is to be held well forward over a basin for the reception of the returning fluid. Make a second mixture of the Peroxide of Hydrogen of the strength of four drachms to twelve ounces of water. The catheter is passed well down into the larynx, the surrounding parts, and thoroughly irrigated. The fluids are very seldom swallowed, and if this fluid mixture should be swallowed there is no danger of poisoning, as it is a perfectly harmless antiseptic. The fluid is generally immediately expelled by coughing. The mouth is to be kept wide open and the head well forward. By this mode of treatment patches of membrane, inspissated muco-pus, etc., can be washed away without difficulty and without pain. My experience with Peroxide of Hydrogen for the last four years has made me familiar with its varied use in the treatment of diseases of the nose and throat. From a consideration of the action of Peroxide of Hydrogen upon the deposit of diphtheritic membranes, and the rapid reproduction of bacteria, it will at once be evident that the earlier the application of the remedy is adopted, the better. While the membrane is thin and friable, the action of this agent is thorough, quick, and effective; the deposit melts down before the contact of it like sugar in water, to be reproduced in a short time and again removed until the diseased tissue beneath can be plainly seen free from this characteristic covering. In this way, also, the spread of the membrane is checked and its limits often sharply circumscribed, until after some days, when the germinating power of the membrane is conquered and the poison ceases to produce its kind, no more deposit takes place, and the diseased tissues heal. In view of the rapid reproduction of bacteria already mentioned, it is evident that the applications should be no longer apart than two hours, or even less, according to the rapid reproduction of the membranes. Gargling may be practiced by those who are able, but irrigation is preferred, as a more thorough application is thereby made. Irrigation is easily learned by the nurse, and there is absolutely no danger connected with its use. . .

For internal use I give the preference to Glycozone, which is chemically pure

glycerine saturated with active ōzone. It is to be used locally, as a substitute for bichloride of mercury, carbolic acid, permanganate of potash. This is the most powerful of all organic disinfectants and bactericides. I give to a child over two years of age half a teaspoonful of Glycozone, well diluted with water or milk, every two to four hours, and under that age twenty drops. . . .

ON THE MEDICINAL USES OF HYDROGEN PEROXIDE.

By E. R. SQUIBB, M. D., Brooklyn.

Read before the Kings County Medical Association, February 6, 1889, during the discussion on diphtheria, and published in Gaillard's *Medical Journal* for March, 1889, p. 267.

(*Extract.*)

Throughout the discussion upon diphtheria very little has been said of the use of the Peroxide of Hydrogen, or hydrogen dioxide, yet it is perhaps the most powerful of all disinfectants and antiseptics, acting both chemically and mechanically upon all excretions and secretions, so as to thoroughly change their character and reactions instantly. The few physicians who have used it in such diseases as diphtheria, scarlatina, small-pox, and upon all diseased surfaces, whether of skin or mucous membrane, have uniformly spoken well of it so far as the writer knows, and perhaps the reason why it is not more used is that it is so little known and its nature and action so little understood. Until within the last few years, except in a few manufacturing processes, it was chiefly known as a chemical curiosity, rarely seen because difficult to make. . . .

In order to use it intelligently both the pharmacist and the physician must know something of its nature and properties. The name hydrogen dioxide expresses its composition, and its formula, H_2O_2 represents this name. Hydrogen monoxide, H_2O, or water, can under certain conditions be made to combine with a second molecule of oxygen, the result being a water-like liquid, H_2O_2.

This second atom of oxygen is very loosely combined, and the compound molecule is always on a strain to break up into water and oxygen, and when it breaks up, either slowly or rapidly, the oxygen separates in that nascent or most active and potent of its conditions next to the condition known as ozone. It is in the change of this breaking up into the water and active oxygen that the latter element exerts its power, and the simple contact with organic matters, which are themselves of complex nature and in condition to be changed, is sufficient to break up the dioxide and liberate the active oxygen. For example, some albuminoids are instantly changed by contact with hydrogen dioxide, as is shown by rinsing the mouth with a dilute solution, when the albuminoid matters of the secretions are at once coagulated. Then, as all virus is albuminoid, whether propagative or not, it is destroyed, or by coagulation rendered inert by simple contact with this agent, just as it is by contact with corrosive sublimate. This simple experiment of rinsing the mouth with a dilute solution of hydrogen dioxide and examining the discharge of liquid can hardly fail to convince any one of the destructive potency of this active oxygen on some albuminoids, and of its thoroughly cleansing effects upon the mucous surfaces.

Now, if diphtheria be at first a local disease, and be auto-infectious—that is, if it be propagated to the general organism by a contagious virus located about the tonsils, and if this virus, be as it readily is an albuminoid substance, it may and will be destroyed by this agent upon a sufficient and a sufficiently repeated contact. . . . All kinds of spray and injection apparatus can now be easily obtained with fittings of hard rubber or glass, and such only should be used.

A child's nostrils, pharynx, and mouth may be flooded every two or three hours, or oftener, from a proper spray apparatus with a two-volume solution without force, and with very little discomfort; and any solution which finds its way into the larynx or stomach is beneficial rather than harmful, and thus the effect of corrosive sublimate is obtained without its risks or dangers. Adults and children old enough to gargle the pharynx and rinse the mouth will get a better effect in this way, equally without much discomfort, from a three-volume solution; and this applies not only to diphtheria, but to scarlatina and other conditions of the mouth and throat which require cleansing and disinfecting. As vaginal injections in cases of uterine cancer, etc., the strength must be increased until the disinfectant effect is obtained. A copious flushing out with a one-volume solution will often be sufficient. When wetted cloths are laid over external sores an over-covering of oiled silk should be used.

As, in passing through several hands after leaving those of the maker, a little mismanagement may spoil the solution, some easily applicable tests of quality and strength are needed.

So long as the solution will yield any active oxygen at all, it will give this off with active effervescence when poured onto a crystal or two of potassium permanganate. A solution containing only a quarter of its volume will give an effervescence so strong as to be misleading, and therefore a quantitive test is needed. The following is a modification of a testing process given to the writer, with much other useful information by Mr. Charles Marchand, of No. 10 West 4th Street, New York City, one of the oldest and best makers of Peroxide of Hydrogen, and one who supplies it to all parts of the country. . . .

If this agent is to be generally used in the treatment of diphtheria, as it well deserves to be on well established principles of action, it is very important that it be freely applied in the earliest possible stages of the disease, or while it is yet local; and therefore the agent should be easily and promptly accessible in places known to physicians, and not over a mile apart throughout the city, and in hands which know the agent well, and know how to keep it from change and to dispense it on physicians' orders.

If all pharmacists should undertake to keep it—or even all the prominent ones—it would soon share the fate of many other important medicines. . . .

PEROXIDE OF HYDROGEN FOR GONORRHŒA.

REPORT OF R. CHAREST, M. D., ST. CLOUD, MINN.

(*Medical World*, Philadelphia, Pa., June, 1889.)

EDITOR *Medical World:*

I intended for some time to give to the readers of the *Medical World* my favorite treatment for gonorrhœa and gleet, and I will take the opportunity of Dr. H. E. Stroud's offer to do so now.

What I consider the simplest, quickest and least harmful treatment of gonorrhœa is Peroxide of Hydrogen in injection ♎ j to the ℥ of distilled water, three to five times a day.

Internally ten to fifteen grains of soda bicarb., every three hours, to keep the urine alkaline.

Walking to be avoided as far as possible, also beer, coffee, pepper, etc.; keep the bowels regular; use a syringe with tapered end and soft rubber tip for the injections.

The Peroxide of Hydrogen is used a good deal in commerce for bleaching purposes, so there are different qualities of it on the market.

For medical use it must be neutral to the litmus paper, odorless and colorless.*

* See page 5, article headed "Important Information on Peroxide of Hydrogen,"

This kind you may have from C. Marchand, 10 West Fourth Street, New York City. It must be kept at a temperature below 65° F., and no metal must come in contact with it.

In writing to the above-named firm you will receive a pamphlet on this valuable remedy well worthy to be studied.

I consider it the best germicide, as it is the least harmful and the most effective. For the past two weeks I have used it in the form of a spray, in one of the worst cases of eczema, of four years' standing, which had so far resisted the assaults of a dozen doctors backed up by as many drug stores, and is now almost well.

For syphilitic ulcers, soft chancres, diphtheria, ulcerated cervix, in fact, whenever there is pus or germs, this is the true remedy.

In gonorrhœa, when the penis is highly inflamed, use the injection four to five times a day and the inflammation will rapidly be subdued, leaving the urethra in a perfectly healthy condition. The use of a suspensory is a great relief to the patient.

The fl. ext. of black willow is very good for the erections.

It is also the remedy *par excellence* in gleet, and there is nothing like its inhalation to cut short a paroxysm of asthma.

I don't claim the Peroxide of Hydrogen (H_2 O_2) to cure gonorrhœa in three or eight days, for I don't believe there is anything that will do so without danger; but it will cure it in three weeks and leave the unfortunate in the best of condition.

MEDICINAL USE OF HYDROGEN PEROXIDE.

(Editorial *New York Medical Record.*)

It is with pleasure that we peruse the new issue of *Squibb's Ephemeris* for July, 1889, confident as we are that whatever it tells us in accord with the latest scientific advances, and is the result of careful thought and research. Among its articles is one by E. R. Squibb, on "Hydrogen Peroxide" (published also in *Gaillard's Medical Journal*, March, 1889). This substance which is one of the most powerful and at the same time the least harmful of all antiseptics and disinfectants, has never come into general use, probably because it is so unhandy and spoils so readily (Dr. Squibb thinks it is because it is so little known and so little understood). It is made in large quantities by several large firms, but is used chiefly in the preparation of secret remedies. Its properties have been known for a long time. It is a compound of hydrogen and oxygen which is easily decomposed, yielding water and nascent oxygen which quickly oxidizes substance with which it is in contact. The mere application of a solution of Peroxide of Hydrogen to certain albuminoid substances is sufficient to liberate its oxygen, which immediately coagulates the albuminoid substance within its reach. Thus all sorts of virus, whether propagative or not, are destroyed, or by coagulation rendered inert in its presence, just as when strong corrosive sublimate solutions are applied to them. The undiluted liquid peroxide is from its nature very unstable, and on slight disturbance breaks up into water and oxygen with almost explosive rapidity. Therefore it is never made nor used undiluted, but is always dissolved in water. The "Peroxide of Hydrogen" which is furnished to the physician is really a solution of the pure liquid in water to which a little hydrochloric acid has been added, the acid being necessary to prevent rapid decomposition of the peroxide. A solution which will yield its own volume of active (nascent) oxygen is called a one-volume solution. The fifteen volume solution (yielding fifteen times its volume of nascent oxygen) is that which is generally supplied by the makers. It is put up in pint bottles, containing about fifteen fluid ounces, sold at $9 a dozen. It is colorless and nearly odorless, tastes slightly acid, and leaves a slight fleeting, not unpleasant after-impression. Changes in this solution are indicated by the formation of bubbles of gas, which rise through the liquid or

adhere to the sides of the bottle, and also by increased pressure within the bottles. At or below 59° F., the solution does not change for a long time. At 68° F., it does change, sometimes very rapidly, giving off oxygen gas. The solutions, whether strong or dilute, should be kept cool, outside of the window of the sick-room in winter, and on ice or in ice-water in summer. The bottles in which the solutions are contained must not be held in the hand for any considerable time, as its warmth will cause decomposition. It must not be kept in contact with metals, nor applied by means of metal apparatus, as it not only ruins the instruments, but forms poisonous salts from the metal. It does not attack hard rubber or glass. It is not necessary to apply it as strong as when it comes from the maker. The ordinary fifteen-volume solution sold is not injurious, but it is stronger than necessary, and to use it undiluted is wasteful. For the irrigation of a child's nostrils, pharynx, and mouth, a two-volume (made by adding two ounces of the fifteen volume solution to a pint of water solution,) may be used every two or three hours, and any part of this solution passing into the stomach will do good rather than harm.

Adults and children who can gargle—especially in scarlatina and diphtheria—may use, as a gargle and mouth-wash, a three-volume solution (three ounces of fifteen-volume solution to a pint of water). For vaginal injections, as in cancer, etc., a thorough washing with the one-volume solution will always suffice, but it may be necessary to increase the strength until the desired effect is produced. When cloths wetted in a solution are laid upon external sores they should be covered with oiled silk. The methods for testing the activity of any solution are given in full, but need not be repeated here. Mr. Charles Marchand, of No. 10 West Fourth Street, New York City, is referred to as one of the best makers and furnishers of hydrogen peroxide. It is very necessary to get a good article, as careless preparation and after-handling may render it inactive. It is desirable that it should be applied very early when used in diphtheria, before the deposits in the throat have caused disease of the adjacent parts or of the general system.

PEROXIDE OF HYDROGEN FOR THE RELIEF OF BITES FROM VENOMOUS INSECTS.

By PHILIPPE RICORD, M. D., Newark, N. J.

(Page 148, *New York Medical Record*, February 8, 1890.)

"Recently, while charging my atomizer with the full strength of fresh standard Marchand's preparation of Peroxide of Hydrogen, at the bedside of a child suffering with diphtheria, my attention was attracted by the patient's mother, who appeared in pain, and stated that while taking up a blanket to wrap about her child she supposed she had been pricked by a needle, and on further examination discovered a hornet between the folds she had touched. Thereupon I immediately directed the Peroxide of Hydrogen spray into the wound, the surrounding tissues in a few seconds that had elapsed, being swollen to such an extent as to distinctly mark its site. Instantly all pain ceased, and the swelling rapidly disappeared. In this case the wound was still sufficiently open to readily admit the Peroxide of Hydrogen, and the destruction of the virus was apparently in a moment so completely accomplished that no further treatment was afterward required. May we not, therefore, infer that it is quite possible to annihilate many other poisons, likewise, by the prompt application of so powerful yet safe an agent as the Peroxide of Hydrogen?"

THE NECESSARY PEROXIDE OF HYDROGEN.

Read in the Section of Surgery and Anatomy, at the Forty-first Annual Meeting of the American Medical Association, held at Nashville, Tenn., May, 1890.

By ROBERT T. MORRIS, M. D., New York.

Published by the *Journal of the American Medical Association*, Chicago, August 9, 1890, page 216.

Stop suppuration! That is the duty that is imposed upon us when we fail to prevent suppuration.

As the ferret hunts the rat, so does Peroxide of Hydrogen follow pus to its narrowest hiding place, and the pyogenic and the other micro-organisms are as dead as the rat that the ferret catches when the Peroxide is through with them. Peroxide of Hydrogen, H_2O_2, in the strong 15-volume solution, is almost as harmless as water; and yet, according to the testimony of Gifford, it kills anthrax spores in a few minutes.

For preventing suppuration we have bichloride of mercury, hydronaphthol, carbolic acid, and many other antiseptics; but for stopping it abruptly, and for sterilizing a suppurating wound, we have only one antiseptic that is generally efficient, so far as I know, and that is the strong Peroxide of Hydrogen.

Therefore I have qualified it, not as "*good*," not as "*useful*," but as "*necessary*." In abscess of the brain, where we could not thoroughly wash the pus out of tortuous canals without injuring the tissues, the H_2O_2 injected at a superficial point will follow the pus, and throw it out, too, in a foaming mixture. It is best to inject a small quantity, wait until foaming ceases, and repeat injections until the last one fails to bubble. Then we know that the pus cavity is chemically clean, as far as live microbes are concerned.

In appendicitis, we can open the abscess, inject Peroxide of Hydrogen, and so thoroughly sterilize the pus cavity that we need not fear infection of the general peritoneal cavity, if we wish to separate intestinal adhesions and remove the appendix vermiformis. Many a patient, who is now dead, could have been saved if Peroxide of Hydrogen had been used when he had appendicitis.

The single means at our disposal allows us to open the most extensive abscess psoas without dread of septic infection following.

In some cases of purulent conjunctivitis, we can build a little wall of wax about the eye, destroy all pus with Peroxide of Hydrogen, and cut the suppuration short. Give the patient ether, if the H_2O_2 causes too much smarting. It is only in the eye, in the nose and in the urethra that Peroxide of Hydrogen will need to be preceded by cocaine (or ether) for the purpose of quieting the smarting, for it is elsewhere almost as bland as water.

It is possible to open a large abscess of the breast, wash it out with H_2O_2, and have recovery ensue under one antiseptic dressing, without the formation of another drop of pus.

Where cellular tissues are breaking down, and in old sinuses, we are obliged to make repeated applications of the H_2O_2 for many days, and in such cases I usually follow it with balsam of Peru, for balsam of Peru, either in fluid form or used with sterilized oakum, is a most prompt encourager of granulation.

If we apply H_2O_2 on a probang to diphtheritic membranes at intervals of a few moments, they swell up like whipped cream and come away easily, leaving a clean surface. The fluid can be snuffed up into the nose and will render a fœtid ozœna odorless.

It is unnecessary for me to speak of further indications for its use, because wherever there is pus we should use Peroxide of Hydrogen. We are all familiar with the

old law "*Ubi pus, ibi evacua*," and I would change it to read "*Ubi pus, ibi evacua, ibi hydrogenum peroxidum infunde.*" That is the rule. The exceptions which prove the rule are easily appreciated when we have them to deal with.

Peroxide of Hydrogen is an unstable compound, and becomes weaker as oxygen is given off, but **Marchand's 15-volume solution will retain active germicidal power for many months if kept tightly corked in a cold place.** The price of this manufacturer's preparation is $1.00 per lb., and it can be obtained from any large drug house in this country. When using the H_2O_2 it should not be allowed to come into contact with metals if we wish to preserve its strength, as oxygen is then given off too rapidly.

H_2O_2 must be used with caution about the hair, if the color of the hair is a matter of importance to the patient; for this drug, under an alias, is the golden hair bleach of the *nymph's despare*, and a dark-haired man with a canary-colored moustache is a stirring object.

PEROXIDE OF HYDROGEN AND OZONE.

THEIR ANTISEPTIC PROPERTIES.

Read before the International Medical Congress, held at Berlin, Germany, on the 7th of August, 1890. Published by *Medical News* of Philadelphia, October 25, 1890. Pp. 416–418.

BY PAUL GIBIER, M. D.

Director of the Pasteur Institute of New York.

GENTLEMEN:

Since the discovery of Peroxide of Hydrogen by Thenard, in 1818, the therapeutical application of this oxygenated compound seems to have been neglected both by the medical and the surgical professions; and it is only in the last twenty years that a few bacteriologists have demonstrated the germicidal potency of this chemical.

Among the most elaborate reports on the use of this compound may be mentioned those of Paul Bert and Regnard, Baldy, Pean and Larrive.

Dr. Miguel places Peroxide of Hydrogen at the head of a long list of antiseptics, and close to the silver salts.

Dr. Bouchut has demonstrated the antiseptic action of Peroxide of Hydrogen, when applied to diphtheritic exudations.

Prof. Nocart, of Alfort, attenuates the virulence of the microbe symptomatic of carbuncle, before he destroys it, by using the same antiseptic.

Dr. E. R. Squibb,* of Brooklyn, has also reported the satisfactory results which he obtained with Peroxide of Hydrogen in the treatment of infectious diseases.

Although the above-mentioned scientists have demonstrated by their experiments that Peroxide of Hydrogen is one of the most powerful destroyers of pathogenic microbes, its use in therapeutics has not been as extensive as it deserves to be.

In my opinion the reason for its not being in universal use is the difficulty of procuring it free from hurtful impurities. Another objection is the unstableness of the compound, which gives off nascent oxygen when brought in contact with organic substances.†

Besides the foregoing objections the surgical instruments decompose the peroxide, hence, if an operation is to be performed, the surgeon uses some other antiseptic during

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* *Gaillard's Medical Journal*, March, 1889.

† The Peroxide of Hydrogen that I use is manufactured by Mr. Charles Marchand, of New York. This preparation is remarkable for its uniformity in strength, purity and stability.

the procedure, and is apt to continue the application of the same antiseptic in the subsequent dressings.

Nevertheless, the satisfactory results which I have obtained at the Pasteur Institute of New York with Peroxide of Hydrogen, in the treatment of wounds resulting from deep bites, and those which I have observed at the French clinic of New York, in the treatment of phagedenic chancres, varicose ulcers, parasitic diseases of the skin, and also in the treatment of other affections caused by germs, justify me in adding my statement as to the value of the drug.

But, it is not from a clinical standpoint that I now direct attention to the antiseptic value of Peroxide of Hydrogen. What I now wish is merely to give a full report of the experiments which I have made on the effects of Peroxide of Hydrogen upon cultures of the following species of pathogenic microbes: Bacillus anthracis, bacillus pyocyaneous, the bacilli of typhoid fever, of Asiatic cholera, and of yellow fever, streptococcus pyogenes, micro-bacillus prodigiosus, bacillus megaterium, and the bacillus of osteomyelitis.

The Peroxide of Hydrogen which I used was a 3.2 per cent. solution, yielding fifteen times its volume of Oxygen; but this strength was reduced to about 1.5 per cent., corresponding to about eight volumes of Oxygen, by adding the fresh culture containing the microbe upon which I was experimenting. I have also experimented upon old cultures loaded with a large number of the spores of the bacillus anthracis. In all cases my experiments were made with a few cubic centimetres of culture in sterilized test-tubes, in order to obtain accurate results.

The destructive action of Peroxide of Hydrogen, even diluted in the above proportions, is almost instantaneous. After a contact of a few minutes, I have tried to cultivate the microbes which were submitted to the peroxide, but unsuccessfully, owing to the fact that the germs had been completely destroyed.

My next experiments were made on the hydrophobic virus in the following manner:

I mixed with sterilized water a small quantity of the medulla taken from a rabbit that had died of hydrophobia, and to this mixture added a small quantity of Peroxide of Hydrogen. Abundant effervescence took place, and as soon as it ceased, having previously trephined a rabbit, I injected a large dose of the mixture under the dura matter. Slight effervescence immediately took place and lasted a few moments, but the animal was not more disturbed than when an injection of the ordinary virus is given. This rabbit is still alive, two months after the inoculation.

A second rabbit was inoculated with the same hydrophobic virus which had not been submitted to the action of the peroxide, and this animal died at the expiration of the eleventh day with the symptoms of hydrophobia.

I am now experimenting in the same manner upon the bacillus tuberculosis, and if I am not deceived in my expectation, I will be able to impart to the profession some interesting results.

It is worthy of notice that water charged, under pressure, with fifteen times its volume of pure oxygen has not the antiseptic properties of Peroxide of Hydrogen. This is due to the fact that when the peroxide is decomposed nascent oxygen separates in that most active and potent of its conditions next to the condition, or allotropic form, known as "Ozone." Therefore it is not illogical to conclude that ozone is the active element of Peroxide of Hydrogen.

Although Peroxide of Hydrogen decomposes rapidly in the presence of organic substances, I have observed that its decomposition is checked to some extent by the addition of a sufficient quantity of glycerine; such a mixture, however, cannot be kept for a long time, owing to the slow but constant formation of secondary products, having irritating properties.

Before concluding I wish to call attention to a new oxygenated compound, or rather ozonized compound, which has been recently discovered and called "Glycozone" by Mr. Marchand.

This Glycozone results from the reaction which takes place when glycerine is

exposed to the action of ozone under pressure—one volume of glycerine with fifteen volumes of ozone produces Glycozone.

By submitting the bacillus anthracis, pyocyaneous, prodigiosus, and megaterium to the action of Glycozone, they were almost immediately destroyed.

I have observed that the action of Glycozone upon the typhoid fever bacillus, and some other germs, is much slower than the influence of Peroxide of Hydrogen.

In the dressing of wounds, ulcers, etc., the antiseptic influence of Glycozone is rather slow if compared with that of Peroxide of Hydrogen, with which it may, however, be mixed at the time of using.

It has been demonstrated in Pasteur's laboratory that glycerine has no appreciable antiseptic influence upon the virus of hydrophobia; therefore, I mixed the virus of hydrophobia with glycerine, and at the expiration of several weeks all the animals which I inoculated with this mixture died with the symptoms of hydrophobia.

On the contrary, when glycerine has been combined with ozone to form Glycozone, the compound destroys the hydrophobic virus almost instantaneously.

Two months ago, a rabbit was inoculated with the hydrophobic virus, which had been submitted to the action of this new compound, and the animal is still alive.

I believe that the practitioner will meet with very satisfactory results with the use of Peroxide of Hydrogen for the following reasons:

1. This chemical seems to have no injurious effect upon animal cells.
2. It has very energetic destructive action upon vegetable cells—microbes.
3. It has no toxic properties; five cubic centimetres injected beneath the skin of a guinea-pig do not produce any serious result, and it is also harmless when given by the mouth.

As an immediate conclusion resulting from my experiments, my opinion is, that Peroxide of Hydrogen should be used in the treatment of diseases caused by germs, if the microbian element is directly accessible; and it is particularly useful in the treatment of infectious diseases of the throat and mouth.

HYDROGEN PEROXIDE IN DIPHTHERIA.

By DAVID PHILLIPS, M. D.

(Extract from the *New York Medical Journal*, December 6, 1890.)

To the Editor of the *New York Medical Journal:*

Sir:—I would suggest the following local treatment for diphtheria: The application to the membrane of Marchand's solution of Peroxide of Hydrogen, fifteen volumes, with an equal bulk of water, then scraping the membrane off with a curette and applying the Peroxide of Hydrogen, one-third dilution, every hour for six or seven hours, then every two hours. If there is no reappearance of membrane after two days, spray the throat occasionally with an antiseptic spray. In this way the membrane is removed at once. The operation is done at a period of the disease when there is no danger of heart failure, so that the struggles of a child need not be minded.

I am aware that the removal of the membrane in former years was regarded as somewhat dangerous, but at that time nothing was known of disinfectants and germicides.

It would seem that a remedy which, applied to the diphtheritic membrane, removed it after some hours, would prevent its formation. In tolerant patients the peroxide may be put on three or four times so as to be sure of complete disinfection before curetting. A small Thomas' uterine curette answers the purpose admirably. A patient treated as described was comparatively well in two days.

PEROXIDE OF HYDROGEN.

By A. LIVEZEY, M. D., Yardley, Pa.

(Extract from *Medical Summary*, December, 1890. Page 214.)

After trying for the past five years innumerable therapeutic agents for my lupus or epithelioma, I was advised by Dr. Cutter, a celebrated microscopist and scientist of New York, to spray the ulcer with the peroxide and afterwards apply cotton saturated with the same. I used three different local applications, aristol, Howe's salve, and the Peroxide; marked the cotton and sent the same to him.

He reported the best results from the peroxide and advised its continuance. Though it did not kill the sores it made them inactive, while no perceptible difference could be seen upon them from the other two. This peroxide bore the initials P. &. W., our noted Philadelphia chemists. Seeing Marchand's advertisement in the *Summary*, I concluded to try his, and sent for some. He kindiy included in the order his glycozone to use in conjunction with the peroxide. A marked change was the result. The sore looked better, cleaner, healthier, and upon examination of the cotton, Dr. C. wrote me to continue the use of Marchand's. Here was a decided test and in favor of Ch. Marchand's. The ulcer has steadily progressed for the better. * * * *

HYDROGEN DIOXIDE; A RESUME.

By JOHN AULDE, M. D., Philadelphia.

Member of the American Medical Association, of the Medical Society of the State of Pennsylvania, of the Philadelphia County Medical Society, etc.

(Published by the *New York Medical Journal*, December 27, 1890.)

Within the past ten years the use of hydrogen dioxide (Peroxide of Hydrogen) has become quite general among practitioners whose business has led them to give special attention to some particular class of disorders. Many general practitioners, however, have not availed themselves of the benefit afforded by this comparatively recent addition to our therapeutic resources, owing to the expense and the care required in looking after details, together with the uncertainty which attended its employment. These difficulties no longer exist; but, when we consider the advantages to be gained from its use, the process of evolution has been remarkably slow, notwithstanding the sporadic attempts which have been made to attract the attention of the medical profession. Novel methods of treatment are too frequently shunned without investigation by regular physicians, while, on the contrary, these innovations are readily adopted to the wants of the quack.

In the present instance, although the *furore* for antiseptics continues unabated, the true position of oxygen has been ignored by those who should have given it their first attention. Long-continued and persistent effort has erected an imposing superstructure upon a theoretrical foundation, losing sight of the marvelous influences constantly at work in nature. The corner-stone of this ornate edifice originally adopted was carbolic acid; the pilasters which gave strength and beauty to its walls were composed of carbolated gauze, while cornice and roof were made of protective which had been submitted to a carbolizing process. This highly flavored substance has given place to a number of others, some of which are safer, but no more useful; others are more efficient than carbolic acid, but, as usually employed, are far more dangerous. As the foundation for asepsis rests upon absolute cleanliness, so the foundation for antisepsis must rest upon an equally safe basis as regards the patient.

The only agent known at the present time which fully meets our requirements is oxygen in some of its forms. While the spores of anthrax bacilli resists our most poisonous products—such as solutions of hydrochloric acid (two per cent.), boric and salicylic acids in concentrated solutions—oxygenated water alone, in sufficient quantity was shown by Paul Bert and Regnard to possess the power of destroying the bacteria.

The wonderful properties of ozone are but partially understood; like some other powerful agents, it cannot be safely handled, but it gives great promise of usefulness in the future. The statement has been made that ozone is but an allotropic form of oxygen, and that it is identical with hydrogen dioxide (the subject of the present article,) and for all practical purposes, from a therapeutic standpoint, they may be considered substantially the same. Having, then, at our command a remedy possessing such remarkable properties as a bactericide, one which is perfectly harmless when brought into contact with healthy tissues, it will be worth while to study the indications for its use in the treatment of disease. In the first place, however, I should say a word with reference to the causes which have contributed to prevent its universal employment by physicians—causes already referred to incidentally. * * *

3. *The uncertainty* following the employment of the peroxide has arisen from various causes, and, as this is a subject of paramount importance, the items will be considered in detail. In the pure state hydrogen peroxide is exceedingly unstable, and, in order to render it less susceptible to the action of heat, which causes it to part with nascent oxygen rapidly, minute quantities of hydrochloric and phosphoric acids are added to the usual fifteen-volume solution; but this, instead of retarding, rather heightens the effect of the remedy when applied to unhealthy structures, especially mucous surfaces. When the container is allowed to remain in a warm room, or when it is not properly stoppered, the activity of the preparation is materially lessened, if not entirely lost. An excess of acid is objectionable, however, as it renders the peroxide irritating instead of soothing.

Commercial peroxide which is used extensively for bleaching purposes and in the arts, is doubtless responsible for unsatisfactory results, but, as compared with the medicinal preparation, it is a very inferior product, sold at a cost of about eight cents a pound. Physicians should know that this product always contains a large proportion of acids (two to five per cent.), hydrofluoric, sulphuric, hydrochloric, oxalic, and nitric acids, and, knowing this to be the case, they should be careful to examine the reactions and see that the medicinal preparation obtained by patients is supplied in original packages. The commercial product is not "just as good" nor will it "do as well" for the patient; and if these suggestions are kept in view, the success of the peroxide is assured.

Another important thing which I have learned is, that the mixture of the peroxide with glycerine does not make "glycozone," but, instead, a mixture which generates slowly but constantly secondary products, which appear to possess irritating properties almost as toxic as those of formic acid, well known in Central Africa as a deadly arrow poison. I am of the opinion also that when the peroxide is used in the form of an inhalation by heating with water, a considerable proportion of the nascent oxygen is transformed into ordinary oxygen before reaching the affected tissues, and while I can readily understand how this must detract from its efficiency, remarkably prompt results have attended its administration in this manner. The only obstacle in the way of securing immediate and favorable results from the exhibition of this agent is our inability to command at all times a freshly prepared and thoroughly reliable product, free from the impurities incident to its manufacture; but that difficulty, I believe, is no longer an excuse, as it can be supplied by the principle druggists throughout the country. * * *

Therapeutics—From the Peroxide of Hydrogen we may obtain, in the form of a vapor or spray, the therapeutic effects of nascent oxygen, and as a surgical application or antibacterial substance this product is far superior to the gas itself. Used in the form of a vapor by inhalation, it increases the secondary assimilation by favoring the

elimination of excrementitious products through the stimulating effect upon internal respiration. Just as pure mountain air arouses the activity of functions which have been depressed and promotes health, so oxygen evolved in this manner increases tissue change and prevents the suboxidation which attends upon the arrest of cell function. Oxygen is a tissue builder as well as an oxidizer of carbonaceous and excrementitious products. When it is introduced into the alimen ary tract, abdominal fermentations are arrested by the destruction of the germs which produce them; unhealthy mucous secretions are destroyed, while the vitality of the cells lining the walls of the intestine is augmented, and their power against the absorption of ptomaines and leucomaines greatly increased. The surgeon will find the peroxide an efficient and most convenient antiseptic, as it can be freely used in cavities, in discharging sinuses, and upon the most delicate tissues, without danger of producing the slightest irritation. In all cases of threatened collapse, in low conditions of the system, and during convalescence from severe illness, the physician should bear in mind the wonderful revitalizing properties of this remedy. Perhaps the reader will gain a more practical idea of the applications by a reference to some of the more prominent indications, and I shall briefly pass in review some of the diseases in which it may be used with beneficial results. * * *

Since it has been determined that in *yellow fever* and *cholera* the poison germ is found only in the intestine, the peroxide promises to afford exceptional relief in these diseases. When it is introduced into the rectum, the heat of the body will cause oxygen gas to be evolved, while the local action of the drug will destroy all unhealthy products which may be present in the lower bowel. The nascent oxygen will be taken up by the absorbent structures and enter the general circulation; but if we accept the doctrine of phagocytosis, it will do even more than this, by reason of its stimulating action upon the modified white corpuscles, which are now regarded as the special enemies of bacteria escaping through the walls of the intestines. And for the same reason it may be used with advantage as a lavement in the treatment of *diarrhœa*, dysentery, and in typhoid fever. In the latter disease I have used the pure oxygen gas with very great satisfaction, and have found a solution of the peroxide superior as a mouth wash during the progress of the most tedious disorder.

The peroxide should be used in all forms of *indigestion*, and more especially when the stomach is weak and depressed to such an extent that the usual antiseptics are not well tolerated. Those who use it once for the relief of indigestion, gastritis, gastralgia, and the arrest of fermentation, or an abnormal flow of mucous, will have no cause to regret the selection. A large number of *cutaneous affections* are dependent upon an unhealthy condition of the alimentary tract, such as urticaria, eczema, etc., and, of course, are benefited by the use of the peroxide.

Pulmonary affections have long claimed the attention of those who dabbled with oxygen inhalations, and it is in this class of cases where faithful attention to details will produce most marked effects, although I can not be convinced that any medicament in itself can arrest the progress of the disease. The continued use of the peroxide internally improves the primary assimilation; the regular and systematic inhalation of the vapor will not only improve the secondary assimilation, but will also destroy any morbid products with which it comes into contact in the pulmonary tissues, and, judging from my own experience with this agent, I have no hesitancy in saying that its value is not yet appreciated by a large number of physicians who, with it, might be the means of prolonging human life. My observations with the vapor and spray in *asthmatic conditions* have been surprising, and I have found them of signal service in meeting emergencies, such as asphyxia from coal gas, sudden collapse from hemorrhage, typhoid and other fevers. The long continued use of the vapor has a marked effect in restoring the resiliency of the air-vesicles in *emphysema* when it occurs along with asthma in young persons. A gentleman now under treatment has suffered from asthma since he was six weeks old, and is now twenty-five, but under this treatment he has gained weight, is able to sleep regularly every night, and has

increased sixteen pounds in weight during the past three weeks, while the chest measurement has apparently decreased. This method of treatment is valuable in *phthisis* at all stages, but it should be used as an adjuvant to other treatment and attention given to diet. In this connection should be mentioned the usefulness of the vapor in the treatment of *bronchitis*, subacute and chronic, and at the same time the value in aborting attacks of acute catarrh.

Inhalations of the vapor will prove useful as an adjuvant in neuralgia, anæmic headaches, general debility, malarial toxæmia, and corpulence, combined with diet adapted to the various disorders mentioned.

In *surgical practice*, when the solution of the proper strength is brought into contact with diseased tissues, a brisk effervescence takes place and continues until all the pus corpuscles present are destroyed. The solution may be used topically in nearly all cases of catarrh of the upper air passages in the form of a spray, and it may be used as an antiseptic after the removal of pus in *empyema*. The substance possesses the advantage over other antiseptics of being harmless, and can therefore be used freely in *diphtheria* and *croup*. There are so many indications for its employment that it would be difficult to mention all the *topical uses*, although the following may be referred to, viz., boils, carbuncles, indolent ulcers, carcinoma, and venereal diseases as an injection.

The gynæcologist will find numerous applications for this agent. It may be used in the form of a douche in leucorrhœa, elytritis, vaginismus, and a cotton-wool tampon may be saturated with and placed in a gelatine capsule (veterinary size) and introduced into the vagina in the case of ulceration, vesico-vaginal fistula, and endometritis. The ophthalmologist and aurist will likewise find that it furnishes them the most complete and safe antiseptic that can be had, and gradually its employment will extend to every department of medicine and surgery.

The most flattering commendations of "Marchand's Peroxide of Hydrogen (medicinal)" have been given voluntarily by numerous well-known authors and contributors to medical literature within the past few years, some of whom may be mentioned as additional evidence that the methods here recommended are worthy of further investigation: Dr. W. B. Clarke, of Indianapolis, Ind.; Dr. George B. Hope, Surgeon to the Metropolitan Throat Hospital, New York; Dr. J. Mount Bleyer, of New York; Dr. Robert T. Morris, of New York; Dr. Paul Gibier, Director of the New York Pasteur Institute; Dr. R. Charest, of St. Cloud, Minn.; Dr. E. R. Squibb, of Brooklyn, N. Y.; and others whose names cannot now be recalled. Dr. Morris refers to it as "the necessary Peroxide of Hydrogen". and I have found Marchand's product to possess in a remarkable degree the properties so essential to success—viz., uniformity in strength, purity, and stability.

PEROXIDE OF HYDROGEN IN GYNECOLOGY AND IN OBSTETRICS.

By EGBERT H. GRANDIN, M. D.

Obstetric Surgeon New York Maternity Hospital, Visiting Obtetrician New York Infant Asylum, etc.

(Published by *The Times and Register*, of Philadelphia, January 31, 1891.)

Modern methods of antisepsis enable us in the vast proportion of cases to prevent suppuration. The problem remaining is how arrest it when present, or abort it when imminent.

The virtues of peroxide of hydrogen ($H_2 O_2$) in general surgical practice have recently been heralded by Dr. Robert T. Morris, of this city, in the columns of *The*

*Times and Register.** The object of the writer is to exemplify his personal experience with this agent, through the brief record of a few cases in which he has tested it.

CASE I. *Sub-mammary abscess.*—About one year ago I was consulted by a Mrs. G. She was nursing a two and a half months' puny infant, notwithstanding the fact that the right mamma was fairly riddled with sinuses, and the left presented to my touch faint fluctuation. Her previous medical attendant had exhausted all routine measures, and yet, as she expressed it, "she was going from bad to worse." She had hectic fever and other symptoms of sepsis; her appearance suggested the absolute necessity of rapid action.

I at once weaned the child, of course; made a deep incision in the left mamma, giving exit to a mass of fetid pus, washed out the cavity with bichloride (1-1,000), and packed it with gauze. I thoroughly wetted the sinuses in the right mamma, irrigated and packed them similarly. In a few days I had control of the sepsis, but the pyogenic membrane and its product resisted all my efforts. In despair, and without much hope of success, I washed out the cavities with peroxide of hydrogen (half diluted with glycerine), and applied a compressed gauze bandage. At the end of ten days the abscesses were cured.

CASE II. *Suppurating pelvic hematocele.*—This case was seen in consultation. The patient was a young prostitute, and the only etiological cause I could determine was copulation during menstruation. The tumor bulged in the retro-uterine pouch, and I treated it as follows: Under antiseptic irrigation I aspirated along the finger as a guide, and obtained a mixture of blood and pus. Using the aspirator muzzle as a director, I enlarged the opening transversely, sufficiently to admit a Palmer dilator. Inserting this I divulsed, curetted the cavity—which measured fully three inches square—and washed it out with equal parts compound tincture of iodine and water. I next inserted a flange-rubber drain tube. The cavity was washed out daily through this tube with two and one-half per cent. carbolic, but contrary to my experience with similar cases, it had not contracted much at the end of a week, and was still secreting pus. I then inserted a small Chamberlain glass uterine tube, and distended the cavity with undiluted peroxide of hydrogen. This checked suppuration at once, and when the patient was seen three weeks thereafter, an induration in the posterior vaginal cul-de-sac was the only remnant of the hematocele.

CASE III. *Puerperal septic endometritis.*—Seen in consultation. Fifth day post-partum. Patient had fœtid lochia, tenderness over uterus, rise of temperature, rapid pulse. A number of intra-uterine bichloride douches had been administered before I saw the case. Having differentiated extra-uterine source of the general sepsis, I curetted the cavity of the uterus, according to the method I have repeatedly described and advocated, removing a mass of degenerated decidual matter, and then, instead of applying pure phenic acid to the cavity, and irrigating it with iodine and water, I washed it out through a Chamberlain glass tube with a pint of peroxide of hydrogen (undiluted). The local sepsis was thus at once checked; the patient made a rapid convalescence under the means which suggest themselves for meeting the sepsis already in the sysetm.

These cases typify instances in which the peroxide of hydrogen will be found useful by the gynecologist and obstetrician. As opportunity offers I propose to resort to this agent in vaginitis, urethritis and purulent cystitis. Further, and in this direction I am as yet only experimenting, I am hopeful that in this agent we will find we possess a means which will enable us to avoid laparotomy in certain instances of pyosalpinx. My conclusions on this point, however, it would be premature to state.

My experience thus far with the peroxide of hydrogen justifies the statement that it is absolutely harmless, and that it is at the same time the most efficient of all the agents at present at our disposal for preventing the ravages which uncontrolled suppuration is capable of causing.

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*See p. 72, reprint of article headed "The Necessary Peroxide of Hydrogen," by Dr. Robert T. Morris.

SINUS TREATED WITH PEROXIDE OF HYDROGEN.

(Extract from *Practice*, Richmond, Va., February, 1891.)

Dr. William F. Waugh tells in the *Times-Register* of an old woman who stepped on a nail, which penetrated the foot almost to the superior surface. A sinus formed, and had been discharging for two months when the patient was first seen. Marchand's peroxide of hydrogen was injected into the sinus by means of a hypodermic syringe. The first effect was to destroy the leather of the piston. The sinus was found to be of a horse shoe shape, the probe passing almost through the foot, between the metatarsal bones, and when the peroxide was injected a hard lump could be felt one inch from the opening on the sole of the foot. This was laid open, and a stream of peroxide was sent through. Result: Cured in a week.

DIPHTHERIA AND THE USE OF HYDROGEN DIOXIDE IN ITS TREATMENT.

Read before the Chemical Society of Maryland, February 6, 1891.

By Dr. EDW. J. BERNSTEIN, Baltimore.

(Extract from *Maryland Medical Journal*, February 21, 1891.)

In this very elaborate paper, Dr. E. J. Bernstein says: (p. 361). . . In my first case of diphtheria I began the use of Sulphide of Calcium, but finding that not only was it disagreeable to both the taste and smell, and that it also soiled the bed linen and clothing of the patient, but that the patient continued to get worse, that the membrane which at first was limited to large necrotic patches on the tonsils, now covered the entire anterior pillars of the fauces and the uvula, which was now considerably swollen.

I discarded the nostrum and began the use of Hydrogen Dioxide, which I directed to be sprayed into the throat every hour of the day and night, gradually relaxing the number of night sprayings as the case went on to improvement. I also directed that the nose should be sprayed at least twice a day with the same solution. Within a few hours the mother said she noticed a change for the better in her child, and when I made my evening call it was quite perceptible. I also noticed, which fact I have since seen corroborated by others who had used the drug, the better color of the child. The lips, which before its administration were quite blue, were now of a healthy red color. The membrane in the throat had made no increase. By the following morning there was a decided decrease in the pseudo-membrane, and from now on began to disappear.

In conjunction with the above local treatment, I gave large doses of tinct. ferri chlo. in combination with tonic dose of quinia every three hours.

Cream of tartar lemonade was given ad libitum to appease thirst and to relieve congestion. The air of the room was regularly charged with steam, generated on a small alcohol stove, to which had been added an alcoholic solution of menthol, eucalyptol and thymol. It is well to say that the strength of the hydrogen dioxide was 50 per cent. of Ch. Marchand's 15-volume solution.

In three other cases which came under my observation, I followed out the same line of treatment, and each recovered without any untoward after effects. In the hope that some of you here this evening may be induced to try this plan of treatment, I submit this paper.

HYDROGEN PEROXIDE IN DIPHTHERIA.

By G. F. ADAMS, M. D., Pulaski, N. Y.

(Published in the *Medical Era* of Chicago, Ill., March, 1891.)

The article in the December *Era* copied from the *Medical Times*, by Dr. George W. Major, in regard to the use of Peroxide of Hydrogen in diphtheria, I can heartily indorse. I have just discharged three cases of diphtheria that I treated with Ch. Marchand's Peroxide of Hydrogen. I sprayed the throat with an atomizer filled with full strength 15-volume solution of peroxide in the early stages. The membrane was removed almost at once, and after the first application and one complete clearing of the throat, I then reduced the 15-volume solution by adding three parts water to one of peroxide, and by spraying the throat thoroughly as often as once an hour, all membrane was destroyed, the breath was kept sweet, and the throat in a fairly comfortable condition. When used at first in full strength the patient may complain of a slight smarting, but no irritation results.

The atomizer should consist of nothing but glass and rubber, as the peroxide has a strong affinity for all metals, except gold, silver, and the rare metals.

I can assure all who try Peroxide of Hydrogen as a local application in diphtheria that they will be thoroughly well pleased with it.

SCARLATINAL DIPHTHERIA.

By WM. F. WAUGH, M. D.

(Extract from *The Times and Register*, Philadelphia, March, 7, 1891.)

I desire to place upon record a case that is unique in my own experience; though my readers may, perhaps, have the better results. The case was that of a child under four years of age. He had been attended by a dispensary physician during the first part of the illness; and this gentleman, when he gave up the case, had given a gloomy prognosis, with which I heartily coincided. On my first visit I found the child's throat covered with blackish sloughs, the lips and tongue covered with fissures and ulcers, the nose discharging freely the irritating and offensive secretions of nasal diphtheria, the eyes showing spots of pus at the inner canthus. The child complained of earache and of pain in the forehead, so that the disease had passed up the Eustachian tubes and into the frontal sinuses. Reddish spots and blotches appeared on the face and body. The stench was dreadful, the urine totally suppressed, but the few drops that were passed could not be saved for examination. The child had been delirious for some time, not being able to recognize his parents. The one good point was that his stomach retained milk fairly well.

It has not been my good fortune to witness the recovery of many such cases. In fact, the more extended is my experience with diphtheria, the more I dread it; especially when it has become firmly established in the Schneiderian mucous membrane, and in the passage leading from the naso-pharynx.

I felt it my duty to inform the parents that death was the only result to be expected; and that they could be very thankful if their other children, six in number, should escape.

However, I gave them a bottle of Marchand's Peroxide of Hydrogen, and directed them to syringe the nostrils and wash the mouth out with a solution diluted to one-fourth its strength. *This was repeated every hour, day and night.* No other treatment was employed, and whiskey was given with the milk, as the only food. The child began at once to improve; the right tympanic membrane gave way, and then the solution was

thrown into the ear, and bubbled out at the nose. The urine began to be secreted more freely, and the child was pronounced out of danger one week from my first visit.

One of the other children was seized with sore throat, enlarged tonsils and torticollis; another had a mild attack of scarlatina, but the others escaped without contracting the disease. This in itself is notable, as the children were all kept at home, in a crowded little house, with miserable sanitation.

THE PEROXIDE OF HYDROGEN—ITS USES IN ABDOMINAL SURGERY.

By CHARLES P. NOBLE, M. D.,

Surgeon-in-Chief of the Kensington Hospital for Women, Philadelphia.

(Published by *Philadelphia Medical News*, April 11, 1891.)

The importance of the Peroxide of Hydrogen as a germicide, and more especially as a pus-destroying agent, is becoming firmly established by rapidly accumulating clinical evidence. A very considerable experience with the drug has made me enthusiastic concerning its remarkable qualities; and I find myself extending its application almost daily. In general, in order that antiseptic or germicidal agents may be used effectively, it is absolutely essential that all foreign material, discharges, etc., be first removed, so that the agent may be brought in direct contact with the surface or tissue to be acted upon. It is also true that the power of penetration of the antiseptics in common use is slight, so that they are reliable only in combatting strictly superficial septic processes. This is particularly true of corrosive sublimate solution, which, by its action on albuminous discharges, forms an impenetrable covering which prevents the solution from coming in contact with the tissues to be acted upon. In this respect the action of the peroxide solution is essentially different. It attacks, disintegrates and oxidizes all discharges and dead tissue with which it comes in contact, thus favoring its contact with and action upon underlying tissues. Moreover, the products of its activity escape as water and carbonic acid gas. At this time I do not propose to discuss the relative value of the Peroxide of Hydrogen as a germicide. I believe that our knowledge upon that subject will be far more exact after a little time than it is at present. The fact, however, that this agent has the power to oxidize dead organic matters suggests to my mind a wide field of usefulness for it in preventing sapræmia or ptomaine poisoning, in the treatment of suppurating tracks and cavities in which dependent drainage cannot be had, and in which free irrigation with water is impracticable.

In my work in abdominal surgery I have found Peroxide of Hydrogen of positive value.

In cleaning the hands preparatory to operation I have found it very useful, especially when the skin around the finger-nails has become somewhat horny or roughened from too much use, or from frequent washings, or from prolonged contact with antiseptic solutions. Its power to loosen and to remove dead epithelial cells, and to soften the skin about the nails, is quite remarkable. Moreover, all foreign material about the nails is either oxidized and removed or it is made more accessible to the sublimate solution which is used later. In practice I have used the peroxide after scrubbing my hands through three waters with soap and the nail-brush, then soaking them in turn in saturated solutions of permanganate of potassium and of oxalic acid, and before soaking them in corrosive sublimate solution.

Bacteriological examinations have shown that even this method (omitting the peroxide solution) does not make asepsis certain, as germs have been removed from the subunguial spaces after it has been faithfully carried out. I have not been able to

test the value of the addition of the peroxide of hydrogen solution in securing asepsis by bacteriological experiments, but practically I feel convinced that it is of service in securing that end. The settlement of the question authoritatively will be of great interest to all those who believe in satisfying an antiseptic conscience.

In the management of the drainage-tube after abdominal section, under special conditions, the peroxide solution has been of signal service. In typical cases, in which the drainage-tube is removed after from one to three days, there is no indication for its use. But when from any cause the drainage-tube must remain in longer; it is useful in keeping the tube and drainage track sweet and free from pus. On a number of occasions after a tube had been in a place from a week to ten days, and the discharge has become slightly purulent, I have been able to combat successfully the tendency to suppuration, to shorten the tube gradually, finally to institute a gauze plug for the glass tube, and to secure rapid healing of the drainage track; when otherwise a sinus would have resulted. One such case was one of a ruptured large ovarian tumor, having contents of a jelly-like consistency, which had become distributed throughout the peritoneal cavity. Jelly-like material was discharged through the tube for two weeks, and yet by the use of the peroxide solution rapid healing was obtained. Another case was one of post-operative intra-peritoneal hemorrhage. Tarry blood was discharged through the tube for ten days, yet the same care secured the same result. Another striking case was one of fæcal fistula which formed after the removal of a dermoid ovarian cyst—presumably caused by the growth of a small bunch of hair from the cyst into the bowel. The track was kept clean and the peroxide was used freely. The fæcal fistula closed in three weeks, and the remaining sinus closed within two months from the date of the operation, being kept open for a time by an infected omental ligature, and closing promptly after its discharge.

The peroxide solution has been applied to the drainage track and to the inside of the tube by saturating absorbent cotton, held in a slender long-handled forceps, and passing this down the tube. The peroxide solution has been used pure or diluted (one to two or three.)

I have not used the peroxide solution within the peritoneal cavity during operation, but believe it will prove useful in disinfecting infected pedicles. In removing pus sacs rupture frequently occurs, deluging the broad ligaments with pus. Under these circumstances the ligature applied to secure the pedicle necessarily becomes infected. Heretofore I have washed away septic material with boiled water, and later applied bichloride solution on a sponge to the region of the ligature. In such cases it seems probable that the peroxide solution will be of real value.

In cleaning the abdominal wound preparatory to removing the sutures, the peroxide solution has proven very efficient; especially if a dry dressing—boric acid or iodoform—has been used. Finally, if any pus has formed in the track of the drainage-tube or any of the sutures, the peroxide solution will remove it more efficiently than any other agent.

A RESUME OF THE HISTORY AND PRACTICAL APPLICATION OF HYDROGEN PEROXIDE IN SURGICAL AFFECTIONS.

By S. POTTS EAGLETON, M. D.

Resident Physician in the Children's Hospital, Philadelphia.

(*Medical and Surgical Reporter* of Philadelphia, May 16, 1891.)

Hydrogen peroxide was discovered by M. Thenard, a French chemist, in the year 1818, since which time it has, like many other therapeutical remedies, lain dormant, occasionally being brought forward by some "enthusiast" and its virtues highly

extolled for a time. But the drug, unequal to the task of proving all that had been said in its favor, was again and again returned to its stall of oblivion. Within the past few years, it has been brought before the medical profession, on account of its antiseptic properties, and apparently has awakened into active therapeutic life.

In looking over the literature on the subject, I find that Dr. B. W. Richardson,* in 1862, called attention to the action of hydrogen peroxide in an article upon the subject, which excited widespread interest in the profession at that time and has led to many experiments with the drug, both in surgery and medicine.

It is my purpose to confine myself in this study entirely to the treatment of surgical affections. Before referring to the results of my own experience, during the past few months, I will briefly allude to some of the most important monographs which have appeared from time to time in our medical journals. C. T. Kingzett† believes that the substance exhibits striking antiseptic effects and is capable, even in very small quantities, of arresting the so-called process of fermentation which is originated by living organisms. He further calls attention to the fact that care should be exercised in making the solution neutral before using, and yet admits that neutral solutions are by no means as stable as those of a slightly acid reaction. In closing his monograph he states that the expectations of several noted surgeons of France in the treatment of wounds with this compound have been amply realized; among those may be mentioned M. Baldy, M. Regnard and M. Beau. In summing up his article he futher says that, in his opinion, hydrogen peroxide is far superior to phenol, and that it has been demonstrated beyond question that all wounds treated with peroxide of hydrogen have progressed well, healing generally by first intention.

A. E. Prince‡ speaks most favorable of the results obtained with this remedy.

C. E. Shelley§ considers it to possess anæsthetic properties, and at the same time claiming for the drug, not only a pus destroyer, but that it is an actual stimulant to the surface of wounds. To the carefully conducted experiments of Dr. P. Miquel, quoted by W. D. Bizett,‖ we owe the establishment, on a firm basis, of hydrogen peroxide as a positive germicide. The line of experimentation pursued had the following aim: to determine the quantity of various substances, commonly used as germicides, which, added to a quart of beef tea, would prevent decomposition. Miquel found among a long list of substances used by him, that only two were more powerful than hydrogen peroxide. The following table shows the relative strength, according to his experiments, of the four most powerful germicides:

Biniodide Mercury	0.025 grains.
Biniodide Silver	0.03 grains.
Hydrogen Peroxide	0.05 grains.
Bichloride Mercury	0.07 grains.

The results thus obtained place hydrogen peroxide ahead of bichloride mercury as a germicide, with the advantage, also, of being absolutely void of any toxic action, while the corrosive sublimate is a most virulent poison. Bizett¶ claims that when the pure peroxide, which is syrupy in appearance, is brought into contact with living tissues, it acts as a direct caustic. Various experiments were made by H. Gifford** directly with the *disease germs*, thus testing the germicidal action of the peroxide. Two methods of determining its ability to destroy germs, were used, that of Koch, and his own well-known method. The preparation of peroxide used, was that of Chas. Marchand's (15 vol.). Gifford found that the white and yellow cocci, as well as the bacilli anthrax, were killed in exposures of from $\frac{1}{4}$ to $1\frac{1}{2}$ minutes, It required but $\frac{1}{4}$ of a minute to destroy fully developed anthrax spores. He further found that the solution

*B. W. Richardson, Tr. M. Loc. Lond., 1862, vol. II, pp. 51–53.
†*Ibid.*
‡A. E. Prince, St. Louis, *M. and S. Journal*, 1884, vol. XLVI, pp. 246–252.
§C. E. Shelley, *Practitioner*, Lond., 1884, vol. XXXII, p. 196.
‖W. D. Bizett, *Atlanta M. and S. Journal*, 1888–9, N. S.
¶ W. D. Bizett, *Atlanta M. and S. Journal*, 1888–9, N. S.
** G. Gifford, *Med. Rec.*, N. Y., 1888, Vol. XXXIV, p. 243.

exposed for 40 days, to a temperature of 68–75° killed the yellow pus cocci in from 10–11 minutes. The same solution of peroxide, when diluted with *four* times its bulk, requires an exposure of 30 minutes to kill the pus cocci. If diluted with an equal volume, it kills within ¾ minute. After an experience of six months, I. N. Love* sums up the action of hydrogen peroxide as follows: It is a most efficient means of cleansing purulent surfaces, deep cavities and sinuses, stimulating the healthy process in ulcerating parts. As a destroyer of microbes, a cleanser and securer of comfort, it is of great value as a local application.

My own experience with this drug in surgical affections, during the past ten months; has been most satisfactory. During that time I have used the remedy in the following affections: Abscesses (acute and chronic, of various kinds), suppurating glands, sloughing gangrenous wounds, empyema of the chest, necrosis (general and localized), suppurative otitis media, and wounds of all descriptions. The ages of the cases treated, varied from two to thirteen years. The mode of applying the peroxide was as follows: All cavities, crevices, etc., were syringed with the bichloride of mercury (1-2000, to 1-6000) and then carefully cleansed with the hydrogen peroxide (Marchand's).

At first one volume of this solution was diluted with two to three times its bulk. Later on, I used the full strength. The first effect noticed after applying the peroxide, was the rapid oxidation of all purulent or bloody material, which would cause the distension of crevices, no matter how minute, with the oxygen, which was eliminated as a frothy (often yellowish, depending upon the quantity of pus present) bubbling substance. After the oxidation was completed, the wound was always left in a clean, sweet condition, absolutely free from pus. The wounds were then gently dusted over with iodoform and the usual antiseptic dressings of gauze, etc., were applied. On removal of the dressings, a few days later, it was noticed that the wounds were in almost every instance cleaner (especially marked in acute cases), more healthy in appearance and with a decided diminution in the quantity of pus secreted. The thought being suggested, that possibly the bichloride and not the peroxide was instrumental in producing the favorable results noticed, I commenced a series of control experiments. I would, at one dressing, use simply the bichloride of mercury, following this, at the next dressing, with the peroxide. Thus making actual comparisons in the same cases. After several alternate dressings as above, I found *without exception* that the hydrogen peroxide perceptibly diminished pus formation to a much greater degree than simply the bichloride alone.

The belief that iodoform should not be used in conjunction with the peroxide, for fear of liberating free iodine, which, as a direct irritant, would defeat the object in view, is, I believe, erroneous. I found that when a quantity of iodoform was placed in a small receptacle covered with the peroxide solution and then set aside for periods varying from three hours to three days, on being treated chemically for free iodine, with the ordinary starch test, gave negative results. Although one drop of a solution of iodine, on being added to the same solutions, gave a brilliant reaction on addition of the starch.

In all cases in which the peroxide was given a fair trial, I have observed a direct healing effect upon the granulating tissues. It is therefore evident that, owing to its oxidizing action on the pus and the diminution of the purulent secretions after its use, it does, either directly or indirectly, cause a destruction of the anthrax bacillus. In concluding my article, I think, from the chemical as well as the experimental evidence which has been deduced, we can safely sum up the action of peroxide of hydrogen in the treatment of surgical affections, as follows:

1. Hydrogen peroxide is a positive germicide and a possible stimulant to granulating tissues.

2. Owing to its especial property of eliminating oxygen, it is of unparalleled value

* I. N. Love, *Phila. Med. Times*, 1887–1888, Vol. XVIII, pp. 362–364.

in the distension of suppurating sinuses and cavities, especially in the mastoid region, or where it is almost impossible to reach unhealthy surfaces by other means.

3. The diluted solution is perfectly harmless and can with safety be used in any quantity.

4. The strong concentrated solution, syrupy in consistence, is a direct irritant to all tissues and should never be used.

5. It possesses healing and cleansing qualities as well as those germicidal in nature.

6. When exposed to light it loses strength; care should therefore be exercised in keeping the bottles well stoppered with rubber corks, and in a cool, dry place.

7. Fibrin, cellular tissue and some metals, instantly decompose it. In contact with sugar and starch it eliminates carbon dioxide (CO_2).

8. In washing suppurating surfaces, it should be used until oxidation ceases, thus showing a complete destruction of all existing purulent material.*

EXTRACT FROM PAPER ON "ADJUVANTS OR AIDS TO GYNÆCOLOGY—NEITHER MEDICAL NOR SURGICAL."

By C. A. PHILLIPS, M. D., Boston, Mass.

Read before the International College of Homœopathy, held at Atlantic City, June 19, 1891.

. . . Another local application of great service in the treatment of gonorrhœal or syphilitic and all ulcerative conditions of the genital organs is Marchand's Peroxide of Hydrogen. While its power to destroy germs and septic matter with which it comes in contact is unsurpassed by any other germicide or antiseptic, it is perfectly harmless to living tissues. With a swab of cotton saturated with this solution the parts can be more thoroughly cleansed than by any other means with which I am acquainted,—thus removing effete poisonous or septic matter, and I cannot understand wherein this is any more objectionable than cleansing the skin with soap and water, or the teeth with a brush.

MEDICINAL PEROXIDE OF HYDROGEN AND GLYCOZONE.

By Dr. J. H. DeWOLF, Baltimore, Md.

(*The Southern Medical and Surgical World*, of Baltimore, Md., August, 1891.)

The topical application of Oxygen is capable of immense benefit. In the pitting of Small-pox I most earnestly advocate and urge its use, either in the form of Glycozone or properly diluted Marchand's Peroxide of Hydrogen (Medicinal). I believe much deformity can be obviated by its use, and the force of the disease lessened. Foul and indolent ulcers, when treated by iodoform, carbolic acid, etc., are apt to poison the patients; such cases have occurred. With oxygen that would be impossible. In large suppurating sores, where the various germicides are dangerous on account of the large breach of continuity and absorption of the poison, the topical application of oxygen is perfectly safe, and to say the least, equally efficacious.

Ophthalmia is advantageously treated by the topical application of either the Peroxide or Glycozone. Styes can be aborted if Glycozone be rubbed on the lids at the commencement; and as styes are painful, and swelling and pain last for a few days, the use of

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(Read before the D. Hayes Agnew Surgical Society of the undergraduates of the Medical Department of the University of Pa., February, 1891.)

Glycozone is satisfactory to both patient and physician. In nasal catarrh, when the mucous membrane is dry and crusts form, prompt and more satisfactorily results can be obtained from Glycozone than from any other means known.

In the various chronic inflammations of the throat which are ordinarily obstinate to treatment, I have frequently satisfactorily treated by the Peroxide (diluted,) especially when the orifice of the eustachian tube was closed by swelling, and the patient rendered uncomfortable by temporary deafness and ringing in the ears.

PEROXIDE OF HYDROGEN, MATERIA MEDICA AND THERAPEUTICS.

Vol. II, Page 681, 1891.

By JOHN V. SHOEMAKER, A. M., M. D.

Professor of Materia Medica, in the Medico Chirurgical College, of Philadelphia, Pa.

Pharmacology.—The usual strength of peroxide of hydrogen is called the fifteen-volume solution, because each portion of the solution yields fifteen volumes of the oxygen. It is prepared by Charles Marchand, New York, for medical use, and is an active oxidizing and antiseptic agent. Glycozone is the trade name of a similar preparation in which glycerine is the vehicle.

Therapy.—Though less powerful than many other antiseptics, the solution of hydrogen peroxide has a special place in surgery, gynecology, and obstetrics, on account of its powers of decomposing pus and destroying the microbes of suppuration. Being free from all irritating qualities, it can be poured over wounds, injected into sinuses, or into the ear, or used as a spray in ulceration of the pharynx and of the larynx.

It produces a frothing up when it encounters pus, owing to the liberation of oxygen, and the cessation of this commotion indicates the removal of all pus. The surface of the wound or ulcer becomes blanched, but is not injured by the application.

Tubercular and mammary abscesses especially are well treated in this way. In ulcerative tonsilitis, fetid breath, and in some bronchial affections, a spray of dilute hydrogen peroxide is productive of benefit. A spray of this agent is likewise of utility in chronic nasal catarrh, ozœna, and scarlatinal angina. It has been administered, well diluted, in gastric affections, and is said to be very useful in flatulent dyspepsia, heart-burn, catarrh of the stomach and bowels, etc.

In diphtheria and croup its value has been established; a two volume solution is especially recommended in young children as a local application, and particularly after separation of the membranes, in order to remove the odor and disinfect the surface. Internally it is too quickly decomposed in the stomach to render much service as a source of oxygen to the blood. It might prove of value in gastric ulcer.

PEROXIDE OF HYDROGEN IN DISEASES OF THE MUCOUS AND SEROUS MEMBRANES.

By W. S. MULLINS, M. D., Henderson, Ky.

A paper read before the International Homœpathic Congress, Atlantic City, N. J, June 16–23, 1891.

(Published by the *Medical Era* of Chicago, November, 1891.)

Since the discovery of Peroxide of Hydrogen in 1818 by the French chemist, Thenard, and its introduction to the medical profession by Richardson, in 1858, it has, like most remedial agencies brought forth by the empirical school of medicine, enjoyed great favor for a few years, only to fall into disuse, not because it did not possess virtues peculiar to itself, but from the fact that it was an impure chemical substance, producing

escharotic effects when applied locally, and poisonous effects upon the system when diluted.

What it may do outside of its remedial effects upon mucous and serous membranes, I know not. But the results obtained in diseases of the nose, throat, ear, skin and womb, I have had an extended clinical experience of ten years. It is Marchand's Peroxide of Hydrogen, $H_2 O_2$, that I speak.

I know of no chemico-therapeutical substance of modern use, that brings the physician a more decided and powerful curative action, in its range of indications.

Before entering into its chemical adaptation, permit me to say, by way of caution, that in no instance, and under no circumstances, should the commercial and poisonous Peroxide of Hydrogen be used. Neither should it be applied or inhaled except by means of glass, rubber, porcelain or gold instruments, as its effects are certainly contaminated, if not entirely destroyed, by any other appliances than the ones named.

In acute, subacute or chronic cases of catarrh of the head, when accompanied by an acrid, excoriating discharge, and much sneezing, it will almost certainly control the sneezing and change the nature of the discharge from acrid to bland.

In chronic nasal discharge, either from the anterior or posterior nares, of a yellowish greenish fetid character, with an accumulation of hardened pus and scabs in the nose, it will soften them and cleanse the nose effectually.

In both conditions of nasal catarrh as enumerated to be followed by an application of glycozone on a cotton swab; or, better still, to saturate a small cotton tampon of borated cotton with the glycozone and place it well up each nostril; allow it to remain from one to two hours, cautioning your patient to remove it gently and to desist from any forcible blowing of the nose between treatments.

In granular pharyngitis, produced by smoking apply by means of a spray as follows:

℞ Peroxide of Hydrogen, 15 volumes, ℥ ss.
Aqua distillata, ℥ ijss.

To be followed by inhalations of ozonized vapor. It is a radical cure. Three sprayings and three inhalations in bad cases, and once a day in simple cases, should be used cautioning your patient to hawk as little as possible.

In diphtheria, an early application of copious and frequent spraying of the nose, mouth, throat, pharynx and larynx, administered with a mixture of:

℞ Peroxide of Hydrogen, 15 volumes, ℥ ss.
Aqua distillata, ℥ iij.

When diphtheria is well developed, irrigate copiously and frequently, the nostrils, pharynx, mouth and larynx, with a stronger mixture as follows:

℞ Peroxide of Hydrogen, 15 volumes, ℥ jss.
Aqua distillata, ℥ ss.

The above is the best local application for this most dread disease. It is to be used of course with the indicated internal remedies.

In bronchitis and asthma, administer ozonized vapor inhalations three or four times a day with a solution made as follows:

℞ Peroxide of Hydrogen, 15 volumes, ℥ iss.
Glycerine, ℥ j.

Koch's lymph or Shurley-Gibbes iodine, chloride of gold and sodium, are nowhere in benefiting your consumptive patients, when compared with the following:

℞ Peroxide of Hydrogen, 15 volumes, ℥ ij.
Pure glycerine, ℥ j.

M. Sig. Shake well, inhale for ten minutes, four times per day, in alternation with the following:

℞ Fl. ext. Hydrastis, ℥ ss.
Glycerine, ℥ j.
Kreasotum, *m* vj.
Aqua distillata, ℥ jss.
M. Sig. As directed.

In cases of the many different varieties of eruption seen so often upon the faces of young girls from 15 to 23 years of age, including blackheads, by applying first for about three minutes, to the face, a flannel cloth as hot as can be, wrung out of hot water, then apply by means of a sponge Marchand's full strength Peroxide of Hydrogen, followed by rubbing well into the skin, boracic acid; one to three applications per day, according to the severity of the case, will give you all the reputation you desire as a dermatologist.

CONJUNCTIVITIS.—The following makes a splendid application for catarrhal or granulated conjunctivitis:

℞ Glycerine, ʒ j.
Boracic acid, ʒ j.

Mix well in a mortar and add Peroxide of Hydrogen, ʒ j. Apply by means of a camel's hair brush. Keep well corked.

CHRONIC ULCER.—I have just dismissed from my office, cured, an old chronic ulcer of the leg of fifteen years' duration. It was one inch deep, three inches long and two inches wide.

The only treatment the patient received was the application of Peroxide of Hydrogen, 15 volumes, dropped on carefully night and morning by an ordinary glass dropper, being careful not to disturb the white foam thereon. The whole was then covered by borated cotton, saturated with glycozone, oil silk over this, the leg kept bandaged from the foot to the knee by an Empire elastic bandage—by the way, far superior to Martin's.

During the three months he was under my treatment, he received three doses of sulphur, 47m, ten doses of Arsenicum, 3x, ten doses of Argentum nit., 6x, ten doses of Lachesis, 6x, ten doses Calcarea sulph., 6x, which, in my mind, contributed much to curing the case.

GYNECOLOGY.—In the field of gynecological work, nothing serves me as well and often, nor is there anything in my opinion, to take its place.

ABSCESS OF THE LABIA.—Puncture with bistoury, cleanse with pure Peroxide of Hydrogen, 15 volumes, then by hypodermic syringe inject slowly into the sac, 10 or 15 drops of Glycozone; very little reaction follows, and the results are perfect.

VAGINITIS.—As a vaginal douche, use hot buttermilk; then by aid of the speculum and a small cotton swab on an applicator, apply the pure Peroxide of Hydrogen, 15 volumes, to the entire mucous membrane, including the cervical canal, to be followed at once by an application of Glycozone. Insert into the vagina a roll of cotton saturated with Glycozone, which serves to keep the inflamed surfaces apart. Use the same treatment for vulvitis.

ENDOMETRITIS.—In endometritis, when the discharge is white and acrid, or yellowish, greenish and fetid, apply full strength, 15 volumes, being careful not to wipe off the foam generated, follow by one application of a tampon, or tampons, saturated with Glycozone.

CHRONIC METRITIS.—Copious hot water vaginal douches; then apply full strength, Peroxide of Hydrogen, 15 volumes, followed by tampons of Glycozone, applied every other day. This treatment is worth the consideration of any member of this institute. It is, of course, understood that in all cases the indicated remedy must be used, combined, in the judgment of the physician.

In almost all cases where the Peroxide of Hydrogen is used in the nose or throat, it should be diluted one-third, one-fourth, one-half, three-fourths, and sometimes four-fifths, with pure distilled water.

My rule has been, except in cases of nasal catarrh, accompanied with much sneezing and very acrid excoriating discharge, to use it just strong enough to produce a very slight tingling sensation.

It should be borne in mind that, when used in the nasal cavities, it produces frequent sneezing, and if too excessive, should be diluted still more. If its use on irritated, inflamed or ulcerated surfaces should produce a too free discharge of blood, you may conclude that it needs further weakening.

If you desire a better, quicker and more effective local treatment for carbuncles than carbolic acid, in conjunction with your constitutional remedies, inject pure medicinal Peroxide of Hydrogen by use of hypodermic syringe; a keen, cutting, stinging pain follows. When the pain has subsided, inject by same means, a few drops of Glycozone. I am only sorry my time will not permit me to enter as fully as I would like in explanation of its beneficial use, and speak of its great curative powers in eczematous vesicular eruptions, in vesicular erysipelas, in aphthous and cancerous conditions of the mouth and of its value as an internal remedy in gaseous dyspepsia that will not respond to Lycopodium, China, Argentum, Magnesium, Phosphorus or Carbo veg.

As I have already indicated, I have great faith in the Peroxide of Hydrogen, in the treatment of consumption. Give inhalations on alternate days, of the Peroxide, and Hydrastis, at the same time giving nourishing food, and attending to other conditions. It has helped me to cure several well-developed cases of consumption. The use of the Hydrastis is not original with me, but the plan of alternating the two I have never known to be used by others.

I am loth to leave this, to me, interesting subject. I trust that it may be of benefit to you.

WAX IN THE EARS.

By A. S. TUCKLER, '92, C. M. C., S. F,

(Published by the *California Medical Journal*, San Francisco, Cal., June, 1892.)

A simple method of removing "wax in the ears," is to take Peroxide of Hydrogen, (Marchand's), warm it in a water bath, then with an atomizer spray the meatus for about five minutes. This will soften and partially dissolve the cerumen. An ear spoon will now remove the mass, and to the surprise of the patient, the sense of hearing will be immediately restored. A little more of the spray to cleanse the parts will be all that is necessary. This is a far safer method than the digging-out process, and not liable to perforate tympanum, an experience which the writer has been subjected to.

SOME PRACTICAL POINTS IN THERAPEUTICS.

By JOHN A. LARRABEE, M. D.

Professor of the Principles and Practice of Medicine, Hospital College of Medicine, Louisville, Kentucky.

(Abstract of paper read before the Louisville Medico-Chirurgical Society, Oct. 2, 1891.)

Permit me, in conclusion, to make mention of those therapeutic agents which, during the summer months, have been weighed in my practice and have not been found wanting. In entero-colitic diarrhœa, the so-called "summer complaint" of cities, dependent upon the various micro-organisms, vitiated air, and bad food, salol, naphthaline, carbolic acid (nascent), calomel in minute doses and nitrate of silver, have stood the test. In gastro-enteritis, I have found salicylate of bismuth useful, and in inflammatory diarrhœa (the dysentery of some authors) of infants and older children, Rochelle or Epsom salts in acid infusion of roses with small doses of laudanum. In chronic cases the nitrous acid camphor mixture of Dr. Hope has not failed. For the gastric fevers so common in children, the preparations ammonia-phenique and sulpho-phenique of M. Declat have been used exclusively in a large number of cases with much better

L.W.C.

results than any former treatment; also the same for the exanthema. For "whooping-cough," Declat's syrup coqueluche is nearly a specific. In diphtheria, locally, Marchand's Peroxide of Hydrogen and whiskey internally have established their value. A word in regard to the use of the peroxide. It should always be purchased in the smaller four-ounce bottles, protected from the light by blue glass bottles and corked with rubber. That sold by the druggists from large bottles is, in the majority of cases, worthless. It is a very unstable article, and unless it causes immediately a white, foamy reaction when brought into contact with the false membrane, it should be discarded and another lot obtained. I am satisfied that I use it more freely and more persistently than most practitioners. I use mops made by twisting a sort of absorbent cotton upon sticks, using as many as thirty or forty in the twenty-four hours. Such mops will take up nearly a half ounce apiece, and when forced well back into the pharynx reach all parts. The gagging and resistance of the child assists in the distribution of the fluid. As soon as a mop has been used it is committed to the fire. In this way I have treated the worst as well as the milder forms of diphtheria with complete success. I believe that the systematic use of definite, although often topical doses of whiskey, even in children of tender age, to be the surest safeguard against heart failure.

PEROXIDE OF HYDROGEN IN TYPHOID FEVER.

By F. H. WIGGIN, M. D., 55 W. 36TH ST., NEW YORK.

(Published by the *New York Medical Record*, November 28, 1891.)

Having had good results in using Peroxide of Hydrogen locally in diphtheria and tonsilitis, and in infected wounds, it occurred to me, when a case of typhoid fever came under my care, during my summer practice, that this remedy might be beneficial, it being the most powerful non-poisonous germicide we possess.

On August 24th I was called to see Abby M—, who gave a history of having been ill for a week with fever and diarrhœa. On examination I found a characteristic case of typhoid fever with temperature 104½° F.; pulse, 130; rose spots, abdominal pain, tympanites. diarrhœa, and mild delirium. I prescribed one ounce of 15-volume Peroxide of Hydrogen* to eight ounces of water, to be taken every three hours, by the mouth. On the following day I found the patient more comfortable; temperature 103° F.; pulse 112; had had only two movements during the twenty-four hours; less delirium and less pain in head. On the 26th had had one movement; temperature 102° F., pulse 104; less tenderness in abdomen, and pain in the head diminishing. On the 27th, temperature 100½° F.; pulse 98; no movement; tympanites disappeared, and head, though still weak, clearer. On the 29th, temperature 99½°.; no movement. On the 30th, temperature normal; pulse, 84: formed movement. The case went on now uninterruptedly to recovery, with nothing further of interest to report. On the 9th of September I discontinued my visits, the patient being discharged, cured, though weak.

One swallow does not make a summer, but I report this case hoping that some one who has larger experience for treating typhoid fever may take up the suggestion and let the result be known. The remedy is perfectly harmless, easy to take, and apparently was of great value in this case.

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*Since the above report has been published by the *New York Medical Record*, Dr. F. H. Wiggin stated April 14, 1892, that Marchand's Peroxide of Hydrogen (medicinal) was used by him in this case.

SUBSTITUTION AND ITS ATTENDANT EVILS.

By JOHN AULDE, M. D., 4719 Frankford Ave., Philadelphia, Pa.

(Published by the *Journal of the American Medical Association*, Chicago, Ill., December 5th, 1891.)

The evils attendant upon substitution and sophistication of remedial agents have long been surmised; they have not, however, until recently, received attention at the hands of the medical profession. Increased diagnostic skill, along with greatly improved facilities for the manufacture of medicaments, favor an approach toward mathematical exactness in computing therapeutic results. When these are wanting we challenge the character of the remedy. The question which presents itself is: Has our patient received the true medicament or a base counterfeit? However attractive in theory, it will be found impractical for the medical profession to drift away from the pharmacists and it should be our aim to reward the faithful and bring the guilty to punishment. The friendly bond between the two professions should be honesty, as neither can afford to work independently; there is an interdependence which makes them mutually helpful.

It is said of Lawson Tait, that he has returned to first principles and carries a mill with him, so that when ergot is needed, he prepares it fresh with his own hand. The reliable character of Squibb's ether has been maintained through his business sagacity in having it prepared chemically pure and distributed all over the world in sealed cans, thus precluding the possibility of sophistication or substitution.

The life of a patient suffering from rheumatism may depend upon his being supplied with sodium salicylate prepared by a combination of Merck's chemically pure bicarbonate of soda and true salicylic acid obtained from oil of wintergreen, and yet few pharmacists, even in large cities, pretend to keep either in stock. They are the exception in Philadelphia, and doubtless the same is true of other cities.

Some years ago Dr. Squibb, of Brooklyn, set his seal on Marchand's Peroxide of Hydrogen, by endorsing its character and defending its merits as the most powerful and yet harmless bactericide which could be employed in the treatment of various formidable and fatal diseases. Dr. Robert T. Morris, Dr. Paul Gibier, and other well-known authorities have corroborated his statements from clinical observation, and as a consequence, a revolution has taken place in our methods of treatment in both medical and surgical practice. The efficacy of this simple remedy, its innocuousness and extended field of application, have shed a flood of light upon modern therapeutics, but at the same time there has followed in its train a host of worthless imitations.

The substitution of the commercial for the medicinal peroxide is calculated to work serious injury and destroy our confidence in a most potent remedy. In the treatment of diphtheria, for instance, the commercial product is positively harmful. When death results shall we blame the attending physician or the unscrupulous druggist who substitutes a base imitation for the genuine product? And still, pharmacists who claim to be respectable, do not hesitate to trifle thus with human life. Is it any wonder then, that our mortality percentages are on the wrong side?

Cascara sagrada has been counterfeited and sophisticated until it is almost impossible to secure a reliable preparation of this most useful medicament, although Parke, Davis & Co., the pioneers in its introduction, have adopted every means in their power for the protection of fhe medical profession. Antipyrin, a patented preparation, has met with phenomenal sales, and possesses distinct therapeutic properties, and as a result, imitations and substitutes are offered to take its place in medical practice. Whether these imitations are better or worse than the original product, I do not care to discuss; neither is it for the druggist to decide. The decision here, as to any special remedy or preparation, rests entirely with the physician, as he alone is responsible for the condition of his patient; no one else, not even the druggist, should be permitted to interfere with his

directions. Substitution is an evil which should be guarded against; it is an evil which must be eradicated, or the entire medical structure will collapse. It is a duty we owe to ourselves and to our patients to look after this unnatural condition of affairs in which we are so vitally interested, and the time is near at hand when a systematic effort must be made with a view to accomplish the desired end.

This subject is commended to the attention of the American Medical Association, with the suggestion that a committee be appointed who shall recommend suitable measures for the protection of the medical profession from the evils of substitution and sophistication on the part of unscrupulous druggists. Shall we have a list?

HYDROGEN PEROXIDE IN PELVIC ABSCESS.

(Published by the *Bacteriological World* of Battle Creek, Mich., December, 1891.)

We have for a number of years made the use Peroxide of Hydrogen (Marchand's) in the treatment of suppurating surfaces, abscesses, etc., with excellent results, but have never observed a more gratifying result than that recently obtained in a case of pelvic abscess of long standing. The abscess discharged by a small opening just behind the cervix uteri, and was very profuse, and extraordinarily fœtid. Our stock of Peroxide of Hydrogen happened to be exhausted at the time, the new supply ordered being somewhat delayed in reaching us, and we at first employed listerine, using it in the proportion of one part to three of distilled water. There was no apparent effect upon the discharge, as regards either quantity or character. The odor continued as bad as ever. When the new supply of Peroxide of Hydrogen arrived, we immediately began using it in the proportion of one part to ten of distilled water, with the result that after the first washing the intensely fœtid odor disappeared entirely, the discharge became healthy in appearance, and diminished in quantity so rapidly that within ten days there was no discharge whatever, except at the washing, and then the quantity evacuated was not more than a dram, when it had previously been several ounces, besides continuous discharge in the intervals between the washings.

After the first washing with Peroxide of Hydrogen, the patient's temperature, which had for several months previously been above normal, fell to normal and has remained at that point since. There is certainly at present no agent known which could properly replace hydrogen peroxide as a disinfectant of unhealthy surfaces.

It would seem to be especially valuable in the treatment of abscesses, the discharges of which, through the relation of the cavity and the lower part of the alimentary canal, usually possess so repulsive an odor as to render the existence of the patient almost unendurable.

J. H. K.

DENTAL MEDICINE.

By R. M. CHASE, D. D. S., M. D., Bethel, Vt.

Abstract of paper read before the New England Dental Society, October 29, 1891.

(Published by the *International Dental Journal*, Philadelphia, January, 1892,)

Peroxide of Hydrogen still stands at the head as a germicide, and undoubtedly is one of the best antiseptics yet discovered to annihilate germs, bacteria, or microbes, Charles Marchand's preparation, $H_2 O_2$, is, I believe, the best article in the market, as Peroxide of Hydrogen is very susceptible to certain conditions. To get the best results it should

be kept in a cool place, well stoppered and when required for use as much as desired should be poured from a large bottle into a small receptacle, and only what it to be used should be exposed to the light. When small cavities are to be cleansed it should be injected with a small glass or rubber syringe, as metal should not be brought into contact with it as it quickly destroys its utility. For reaching pulp canals I find a small glass medicine dropper very convenient as by pressing upon the rubber bulb quickly it is forcibly ejected and thus forced into the pulp canal without much trouble. I use a wooden tooth pick reduced in size to still further push it into the root. In treating all ill-conditions of the oral cavity I make it a rule to first rinse thoroughly the mouth with peroxide diluted, and then apply remedies suitable for the same. Much more could be said and undoubtedly will be brought out in this discussion upon this and other valuable antiseptics.

PEROXIDE OF HYDROGEN IN THE TREATMENT OF DIPHTHERIA.

(Published by the *North Western Medical Journal*, Minneapolis, Minn., February, 1892)

In the next chapter, we shall give further details with regard to the treatment of diphtheria, but at this point we feel that we should not close without announcing in the most emphatic terms, that one of the most available agents that we have for the fighting of diphtheria locally, and preventing constitutional involvement is the "Necessary Peroxide of Hydrogen" made by Chas. Marchand, of New York. We would take no chances by using any other manufacture. Charles Marchand was the pioneer in the development of this particular agent, for medical use. It is the "Medicinal Peroxide of Hydrogen which can be depended upon to render diphtheria germs inert as thoroughly as water can be depended upon to put out a fire, or as heat can be relied upon to annihilate the icicle. We believe that every case of sore throat, whether pronounced diphtheria or not, as well as every case of scarlet fever, should have applied to the throat at intervals varying according to the necessities of the situation, the full strength of the Marchand's Peroxide of Hydrogen. It may be used as a gargle, though I am somewhat in favor of flushing the parts with a good syringe, or if this is not available, owing to the objection of the patient, particularly if it be a little one, atomizers are now furnished which act very efficiently, and by using them frequently, the full effects can be secured. It is well to give internally occasionally, teaspoonful doses of the peroxide. It may be diluted or not, as one pleases, All the secretion which has been swallowed will thus be acted upon in the stomach. In addition, there is a general accumulation of fermentative products in the stomach, undigested food, etc. The oxidization of these irritants is desirable. If the patient complains that the application is irritating it may be diluted with one, two or three parts of water.

The position which we took nearly four years ago with reference to the use of Peroxide of Hydrogen in the treatment of diphtheria in a paper read before the St. Louis Medical Scciety, has been strengthened with the experience which has followed. We would emphasize every material point then made in that paper. If asked "if we were to depend upon only one agent in the local treatment of diphtheria, what would we call for," the response would be emphatic, in thundering tones, "Marchand's Peroxide of Hydrogen," and if we ascertain that any druggist furnished our patient with any other than Marchand's it would be sufficient for us to condemn that druggist and rather than run the gauntlet of his repeating the offense, we would supply the medicament at our own expense.

RECENT INVESTIGATIONS RELATING TO THE PREVENTION OF DIPHTHERIA AND SCARLET FEVER.

By Dr. J. LEWIS SMITH.

Professor Diseases of Children, Bellevue Medical College, New York.

Abstract of paper read before New York County Medical Association, March 21, 1892.

(Published by the *Doctor's Weekly*, March 26, 1892.)

In his report the author entered fully into the pathology and etiology of the two diseases, and dwelt at some length on their differential diagnosis. He related many interesting facts in connection with the contagiousness of diphtheria, spoke of a case of the disease resultiong from the employment of a brush that had been used for swabbing the throat four years before in a similar trouble. Does not believe diphtheria ever originates *de novo*, that it is dependent at all times on the presence of a specific microbe. Damp cellars, the presence of sewer gas and other unsanitary conditions contribute largely to its development. Many mild attacks of the disease are overlooked by the attending physician, and as a consequence it is communicated to others, notably in the school room. He believes in thorough disinfection as a means of preventing a spread of the disease. Does not have much faith in sulphur for this purpose; prefers a strong solution of corrosive sublimate or five per cent. solution of carbolic acid. This should be used freely on walls and floors of rooms where the disease prevails. With the same solution the bedstead and other articles of furniture should be thoroughly washed.

In examining patients suspected of having diphtheria or scarlet fever, the physician should place himself on one side or in the rear and not in front, as is usually the practice. In this manner he avoids the dangers of any diseased matter that might be coughed up by the patient. After such examinations the physician should thoroughly bathe his hands and face in a solution of corrosive sublimate. Exclude everybody but the physician and nurse from the room where a case of either disease exists. While small-pox is thoroughly under control in this city, he doesn't think it possible to gain such control over the two diseases under discussion. The crowded condition of our large tenement houses supplies so much material for their ravages that it is impossible to stamp them out. For the purpose of illustration, the reader related the following experience:

He was called to see the child of a poor woman, living in a tenement house in which there were twenty-seven families. He found a child two years old very sick with diphtheria. Five other children lived in the same rooms; of these, two were away at time of his visit, at school. Just think of the hundreds of children thus exposed! The sick child died two days later.

For purpose of fumigation the author recommended the following:

℞ Ol. eucalyptus,
Acid carbolic, aa ℥ j.
Spir. turpentine, ℥ viij.

M. Add two tablespoonfuls of this mixture to a pint of water and evaporate by aid of a lamp; or cloths saturated with the mixture may be hung around the room.

Does not believe in the efficacy of sulphur fumigation. Microbes in a state of activity may be found in the sweepings obtained from a room that has been fumigated with sulphur.

For the local treatment of diphtheria and scarlet fever, he recommends the following:

℞ Ol. eucalyptus,
Acid carbolic. aa ʒ j.
Ol. olive, ℥ vij.

M. Sig. Apply every three hours.

He also uses Marchand's medicinal Peroxide of Hydrogen one part, to three parts

of water, with much satisfaction. It is prompt in action and quickly destroys the diphtheric membrane.

Dr. Smith's paper was discussed by Drs. Leale, Tyndale and Koplik.

SOME NOTES ON THE VALUE OF PEROXIDE OF HYDROGEN.

By ROBERT T. WILSON, M. D., Baltimore, Md.

Assistant Surgeon to the Hospital for the Women of Maryland,

Editor of *Practice*, Richmond, Va.:

Having read in the January number of your excellent journal, the experience of Dr. S. Potts Eagleton in the use of "Hydrogen Peroxide in Surgical Affections," I am prompted to send you for publication the following:

In January I was called to see a lady in her seventy-six year of age, suffering, as her husband supposed, from an inguinal hernia, but upon careful examination, I diagnosed a deep-seated abscess, and at once ordered hot poultices, to be made of equal parts of flax-seed and corn meal, and applied in the following manner over the skin: White gauze, hot poultice, muslin, oil silk. After a few poultices had been used it was in a condition to be opened. A good incision, giving free drainage was made. The cavity was eight inches in depth. Every day the cavity is syringed with "Peroxide of Hydrogen" (Marchand's) full strength.

The first effect noticed was the rapid oxidation of all purulent matter, which caused the distention of the cavity with the gas eliminated as a frothy yellowish (or yellowish green) bubbling substance. After the oxidation is completed the wound is always in a clean, sweet condition, absolutely free from pus. The cavity is dusted with iodoform, and antiseptic dressings applied. The cavity is gradually healing up from the bottom. In my experience "Peroxide of Hydrogen" (Marchand's) perceptibly diminishes the pus formation. In this connection, I will also state that I am using "Peroxide of Hyrdogen" in a case upon which I operated February 16, and from which was removed a large multilocular ovarian tumor and also an enlarged uterus with many fibroids (hysterectomy). The wound (stump) is in a healthy condition; her general condition is good. Indeed, she is getting along finely. The clamp came away yesterday. The sixteenth day was up yesterday, counting by hours, from the time of the operation. The wound is in a healthy state, and perfectly healed. Hardly a day passes that I am not using the "Peroxide of Hydrogen" in my practice. I send you these notes, hoping they will assist some brother practitioner who may be a reader of your practical journal. Doctors talk with each other about their cases, and I believe they are as much interested in exchanging their experiences by correspondence. We are all mutually concerned.

DIPHTHERIA, LOCAL TREATMENT.

By I. N. LOVE, M. D., St. Louis, Mo.

(Published by the *Medical Mirror*, of St. Louis, March, 1892.)

Judgment should be exercised in this as in everything else. If we select the applications properly they will be sufficiently agreeable as not to annoy or irritate more than they benefit. It may be necessary to avail an opportunity for the application; for the patient may be fretful, easily demoralized by being disturbed; we should wait until rest has been secured, until the sensibilities have been obtunded by proper internal medication.

We should bring to bear our ingenuity to the fullest and diplomacy also; if possible ascertain if the child has a fondness for any particular thing. We should arrange a plan by which a reward in prospect may assist in accomplishing our desires.

For its germicidal effect, and also for the removal of the mechanical obstruction produced by the diphtheritic membrane, Marchand's Peroxide of Hydrogen, (medicinal) should be used promptly, in its full strength, but later it may be diluted to one-half strength. As the mucous membrane becomes exposed after the removal of the deposit, by the means just mentioned, it is important to have on hand an application which is soothing, astringent and at the same time as much antiseptic as it can be made.

I have found the following valuable for this purpose.

℞ Katharmon., ℥ ij.
Glycerine, ℥ j.
Aquæ Cinnamonis, ℥ iij. Sig.

The Peroxide of Hydrogen may be labelled No. 1, the formula just written No. 2. The best means of applying both applications is either by a glass syringe or an atomizer made of hard rubber; but in case neither of these appliances are at hand or available, a piece of wire (silver or platinum) of good strength, may be bent, with a hook at the end, in such a manner, as to serve as a probang by wrapping a pledget of absorbent cotton at the point; the application may be made after thoroughly wetting the same with the solution. No. 2 application should follow No. 1, and will be gratefully received by the little patient.

WOUND CLOSURE AFTER THE EMPYEMA OPERATION.

By CHARLES W. AITKIN, M. D., Flemingsburg, Ky.

(Published by the *Ohio Medical Journal*, of Cincinnati, April, 1892.)

Several times the writer has found it difficult to close the wound made in an operation for empyema, especially if the empyema was of any magnitude or of long standing, so that the lung's function was destroyed by compression, and bound down by adhesions.

Mrs. V., æt. 32, of Bath County, Ky., was confined April 20, 1891. The physician in attendance, Dr. Judy, informs me that there was nothing abnormal in the labor. On April 30th the patient had a chill, and for several days the temperature ranged from 103° to 104.5°. After a few days more she began to complain of pain in left chest and shoulder. I saw her on May 24, in consultation with Drs. Judy and Sharpe, and we agreed to aspirate the left chest; over four pints of fluid were removed; two and one-half pints were fair serum, but the last one and one-half pints had some purulent appearance. During the next six weeks the patient was aspirated several times, and over ten pints of sero purulent fluid was removed at these various tappings. At this time a thoracotomy was decided upon. The patient was taken to the Good Samaritan Hospital, and with the aid of Dr. French, with the house physicians, Drs. Buel and Schoolfield, I opened the chest and let out over four pints of pus, the cavity was thoroughly washed with a saturated boracic solution, and the usual drainage and dressing applied, the case was left in Dr. French's care. The flow of pus was considerable for a week, after that time the boracic irrigation was followed by washing the cavity every day with Peroxide of Hydrogen. The quantity of pus rapidly diminished, the patient gained in strength and weight, and in about four weeks more came back to her Kentucky home. Her husband continued washing the cavity with both the boric solution and H_2O_2 until September 12, when I again looked after the case for a week, preparatory to closing the wound, but as there was still an ounce or so of pus passing per diem, it was thought advisable to continue the Peroxide a while longer. This was kept up a month, when the quantity discharged was not more than one-half ounce a day, but to shut off this drainage for twenty-four hours would cause an elevated temperature and general septic symptoms; at this time a

1 to 4000 bichloride solution was substituted for the boracic solution, the $H_2 O_2$ being continued, a slight bloody discharge was thrown out for a few days, but lessened gradually, until November 3, when I washed the cavity with a 1 to 5000 bichloride solution, followed with the Peroxide of Hydrogen for a few days, and let the wound heal without any unpleasant symptoms. The chest was measured during February, 1892, and at auxillary, mammary and ensiform levels, the left semi-circumference was one inch less than the right. The Peroxide of Hydrogen certainly aided very materially in arresting the suppurative process. Marchand's pure Peroxide of Hydrogen was used with but little dilution.

AN INTERESTING CASE OF EMPYEMA WITH SPECIAL REFERENCE TO THE USE OF PEROXIDE OF HYDROGEN.

By H. F. BROWNLEE. M. D., Danbury, Conn.

(Published by *New England Medical Monthly*, June, 1892.)

This case is interesting in many ways; namely, the length of time which elapsed previous to diagnosis, the degree of exhaustion present at that time, the amount of pus evacuated, and finally, the perfect and rapid recovery of the patient.

Previous to his sickness, this patient was a strong healthy man of about 30 years of age, but who for a few years past had indulged in rather frequent dissipation.

About December 20th he was suddenly taken very sick. The attending physician diagnosed pneumonia and began a vigorous course of treatment which he continued for four weeks. The pneumonia did not resolve but the attending physician continued diligently in his efforts to bring about resolution and at the time I saw him first, over four weeks after the beginning of the attack he was supplied with four glasses of medicine with instructions to take a teaspoonful of each every hour. Upon examination I diagnosed empyema and demonstrated it by the introduction of a hypodermic needle.

At this time the patient was in a condition of extreme exhaustion; temp. 105, pulse hardly perceptible, respiration 48. I had him removed at once to the Danbury hospital; a small amount of ether was administered and a resection performed, removing about an inch of the sixth rib in the axillary line. An opening was then made into the pleural cavity and two gallons of pus evacuated. I did not know the maximum amount of pus ever evacuated in a case of this kind, but I can hardly conceive of a greater amount being contained in the pleural cavity of an ordinary man. The cavity was washed out with Thiersch's Sol.. and two large drainage tubes placed in the wound. The patient became quite cyanotic during the operation and required very active stimulation for several hours afterward.

So much for the case itself, now a few words in regard to his treatment and course of recovery. For two weeks the pleural cavity was washed out every day with Thiersch's Sol. The patient slowly improved but his temperature continued to rise every evening to 102 or 103. I then substituted a Sol. Hydrarg. Bichloride 1-5000, This was used about a week when a very active salivation presented itself. During this time the temperature did not run so high but still continued at about 101 to 101½ in the evening. I then began washing out the cavity with Peroxide of Hydrogen and if I had done this before I would certainly have gained considerable time. I used Marchand's preparation, full strength, putting in a considerable quantity of it with a small syringe, then allowing it to escape and finally washing it all out with a weak Borated Solution.

From this time my patient began rapidly to improve. The temperature fell to almost nothing, rarely exceeding 99½ at night. In two weeks from this time the dis-

charge had entirely stopped and I was enabled to remove my drainage tubes, the wound closing in a few days. He gained rapidly in strength and in eight weeks from the day of operation he was able to return to work.

I cannot say too much in praise of Marchand's Peroxide of Hydrogen (Medicinal) in the treatment of this case. It kept the pleural cavity so clean that there was hardly any septic absorption and finally prevented all formation of pus, the discharge ceasing entirely in two weeks from the time I began its use.

THE VALUE OF PEROXIDE OF HYDROGEN IN THE TREATMENT OF CHRONIC GONORRHŒA, ILLUSTRATED BY A CASE.

By WILLIAMS ROBERTS, Plattsburgh Barracks, N. Y.

Hospital Steward, U. S. Army.

(Published by *Journal of the American Medical Association*, Chicago, Ill., April 30. 1892.)

During the past few years, the many articles on new drugs in the treatment of gonorrhœa leave nothing to be desired in this way. The present article contains nothing new, but simply gives the history of a case of chronic gonorrhœa arrested by the use of Peroxide of Hydrogen—a drug that is "going the rounds," probably to be discarded by reason of its being so unhandy and so little understood.

The following case might serve to illustrate the value of Peroxide of Hydrogen, when used under conditions favorable to the preservation of the drug.

J. H., citizen, age 23, contracted a gonorrhœa March 20, 1890, and received the usual orthodox treatment by internal medication up to July 7th, 1890, the date at which the patient came under my observation. I found a subacute gonorrhœa, which was somewhat relieved by urethral injections, including the iodoform et tannic injection of Dr. Otis.

On August 15th, 1890, the patient complained of difficult micturition, and upon examining the urethral canal, I found the following condition:

Size of urethra at bulb, No. 32 French; 4 inches from meatus, a No. 21 stricture, meatus contracted to No. 20.

The constriction at the meatus was relieved by incision, and the stricture readily yielded to gradual dilatation, and on August 31, 1890, a No. 31 sound was passed without pain. On September 1, 1890, an examination of the urethral canal showed the presence of a small ulcer at the side of the old stricture, and stimulating injections were ordered —without, however, relieving the "morning drop." This drop I examined microscopically, and found pus and mucus corpuscles, with small gonorrhœal threads.

On December 10, 1890, I again examined the urethra, and found the conditions about the same. I had tried the whole list of anti-gonorrhœal remedies, including the medicated urethral bougies and the passage of steel sounds, and was somewhat puzzled to relieve the obstinate form which the disease had assumed.

On January 26, 1891, I commenced the use of Marchand's Peroxide of Hydrogen, 15 volumes, and "Glycozone," with the following results: Two drachms of a mixture of:

℞ Peroxide of Hydrogen, ℥ ss.
Aquæ, ℥ iss. M.

was used to distend the urethra, and held for thirty seconds, and then allowed to escape, The decomposition of the $H_2 O_2$ was very active, showing the presence of pus. I then

injected 1 drachm, which was allowed to remain in the canal two minutes. I repeated this procedure t, i. d., and at bedtime injected one drachm of "Glycozone." This treatment was pursued up to February 9, 1891, when there was no discharge, and the patient declared himself cured.

I had watched this case with great interest, for it was the most obstinate one I had ever seen in not yielding to some one of the many lauded cures for chronic gonorrhœa. During seven months the patient had been under constant treatment, to find that a three weeks' course of treatment by Peroxide of Hydrogen terminated the case quite satisfactorily.

The above data might naturally turn the reader's thoughts to the nature of the remedial agent that succeeded where all others had failed.

The Peroxide of Hydrogen was that prepared by Chas. Marchand of New York. The chemistry of this compound together with the pathological conditions it may be applied to, I will leave to the many advertising agents, and will simply state the care with which the preparation should be preserved, for there are factors which utterly destroy the medicinal properties of this valuable agent.

PEROXIDE OF HYDROGEN AS A DEODORIZER IN CANCER OF THE UTERUS.

By GEORGE W. KAAN, M. D.

Surgeon to Out-Patients, Free Hospital for Women, Boston.

(Published by the *Boston Medical aud Surgical Journal*, April 7, 1892.)

The value of Peroxide of Hydrogen in washing out sinuses and abscess cavities, has led me to use it recently as a vaginal injection in cancer of the uterus; and with gratifying results.

My cases have been few; but in each the distinctive cancerous odor was noticeable about the patient before the use of the Peroxide of Hydrogen and absent afterwards. In one out-patient case the fetor was so pronounced, that the air of the room seemed saturated with it, the moment she entered. When I last saw her in making an examination no odor was perceptible a foot from the vulva, and only slightly so, close to it. In this case she had used the injection the night before, and a cancerous mass as large as a man's fist, hangs in the vagina, within two inches of the vulva. This case has had palliative treatment in the hospital, by curreting, Paquelin's cautery, and chloride of zinc applications. When she first came to me the disease had extended over the whole anterior vaginal wall; since then the Peroxide of Hydrogen has been used, and the anterior wall is clear. It seems to me that the injections have had some curative action.

Further observation, of course, is nccessary, but bearing in mind what Sir Spencer Wells says of cancer and cancerous diseases, that everything in relation to it is so important that nothing should be thought a trifle, and my material being limited, I venture to state the facts as they appear to me in this case.

Regardless, however, of any value it may have as a curative agent, its use as a deodorizer, and this without substituting another odor for the cancerous one, makes it of inestimable worth in adding to the comfort of the patients, where palliative treatment alone is all that remains.

The method of using has been to take about an ounce of the Peroxide of Hydrogen and an equal quantity of water, warmed by being placed in a pan of hot water, and injected through a soft rubber catheter, so that the injection shall be sure to reach the back part of the vagina. Such an injection once or twice a day has been sufficient.

PEROXIDE OF HYDROGEN AS A LOCAL APPLICATION IN RHUS TOX POISONING.

By N. H. HAIGHT, M. D., Oakland, Cal.

(Published by *The Homœpathic News*, of St. Louis, Mo., July, 1892,)

May 20, 1892, I was called to treat a young lady who was suffering from the effects of poison oak. She had been suffering for nearly a week, and had tried everything that friends had recommended, but continued to grow worse. The left side of her face was so badly swollen that the eye of that side was entirely closed and she was suffering intense itching and pain.

I have never heard of Peroxide of Hydrogen being employed in such cases before, but not feeling satisfied with the treatment that I had used in the past, I decided to experiment on this case. I used Marchand's Peroxide of Hydrogen (medicinal), feeling sure it would reduce the inflammation, and by so doing, it would naturally allay the itching. I used in the following proportions: Peroxide of Hydrogen, 1 part; distilled water 2 parts; applied to the affected parts every hour. I also gave internal treatment of croton tig. 200. The next morning I called to see how the case was progressing, and found her very comfortable, the itching and swelling being very much less. I continued the same treatment, and on the fourth day the case was cured. On another case I used $H_2 O_2$ 1 part, tincture grendilla robusta 2 parts, with equally good results but no better.

MEDICINAL VS. COMMERCIAL PEROXIDE OF HYDROGEN.

By W. B. DEWEES, M. D., Salina, Kas.

To the Editor of the *Medical Herald*, St. Joseph, Mo.:

Professional indifference and professional inactivity are probably the two greatest enemies to our individual progress in the profession. Whereas cultivation will alone fit us individually with that broad-gauge knowledge, the practical appreciation of which marks, with lasting effect, the progress to success. Hence, earnest interest and labor are essential requisites, if we would learn to discriminate between the opportunities presenting, lest we cultivate a flowerless plant or we find weeds instead of roses when we look for success. This is aptly illustrated by the course pursued with regard to the selection of remedial agents by so many of us in the profession, from time to time, and probably in no instance more forcibly than in the use of Peroxide of Hydrogen, ($H_2 O_2$.) In this connection, I feel it but a personal duty to the profession to record my own experience with this agent, having for several years made use of Peroxide of Hydrogen in suitable cases (*i. e.*, chiefly where pus formation was found), with very varying results. Like most of my brethren, I took it for granted that $H_2 O_2$ was the same, so long as it was made by our leading manufacturing chemists, and consequently paid no attention as to the effects of special brands, since I felt confident that my druggist was handling only the products of first-class manufacturers, and could distinguish between the "Commercial" and "Medicinal" articles. The result being that I was not impressed with anything like an absolute confidence in this agent to arrest pus formation. It was not till in October, 1891, when in attendance at the annual meeting of the Mississippi Valley Medical Association in St. Louis, that in a personal interview with Dr. Charles Marchand, of New York, relative to the product of his manufacture, that I decided to give this agent another fair trial, and watching the effects carefully with reference to the different makes in the market. This upon the avowed assurance of Dr. Marchand, there was a most striking difference in the result of using the product of different manufacturers. After almost another year of numerous trials and careful

accurate observation with a number of different makes in the market, I am prepared to confidently endorse all that is claimed for the superiority of Marchand's make. I have used three different products alike in abscesses of almost every description, ulcers, gangrene, cancer, endometritis, specific vaginitis, diphtheria, etc., etc., and in each and every instance Marchand's preparation proved above all, not only the most effectual, but in every way a most satisfactory agent for arresting pus formation, and as a non-irritating antiseptic for general use. Therefore, I most earnestly counsel my fellow co-laborers in the profession to be particular in specifying Marchand's Peroxide of Hydrogen (medicinal) whenever this agent is called in use by them.

RETAINED NASAL SECRETION OR SYPHILITIC RHINITIS?*

By C. E. PERKINS, M. D., Sandusky, O.

(Published by the *Medical Standard*, of Chicago, Ill., Oct., 1892.)

Few cases of acute catarrhal rhinitis are sufficiently severe to compel a patient to consult a physician. When such cases occur the symptoms are severe and the diagnosis difficult.

February 7, a 30-year-old unmarried woman, with negative family history as to tuberculosis, rheumatism or lues, consulted me. There was no evidence of lues. The patient had an attack of measels in 1891, from which she and five other members of the family recovered without results of any kind. Up to the commencement of this trouble she had been exceptionally healthy and robust, having never required the services of a physician.

In the latter part of October last she was taken with what she considered an ordinary cold. There was the ordinary symptoms of acute catarrhal rhinitis, viz.: malaise, dryness and heat of the nose followed by discharge, etc., but she had in addition to all these a severe neuralgia on the right side of the face, which persisted for about a month. Early in December complete stenosis of the right side of the nose developed and the left was partially occluded. At this time there was a swelling across the nose, frontal and nasal pains, and slight epiphora, and there was very little running from the nose and that of a watery character. About these same symptoms continued until just before Christmas when she consulted her physician. I am quite certain that he considered the case as one of nasal syphilis, for he prescribed mercurial inunctions and insufflated iodoform daily. She continued under his care for six weeks. At one time in January she had a hoarseness for one week. The right nostril continued occluded, and the left became completely so, although he was adopting rigorous anti-syphilitic treatment. Not making any improvement she consulted me on February 9. I found her weak and anæmic and somewhat emaciated. There was complete loss of apetite, and swelling, redness and pains across the nose.

These pains were so severe as to interfere with sleep; there was complete stenosis of both nasal passages which caused the characteristic voice of nasal occlusion. This, upon inspection, appeared to be due to thickening and infiltration of the tubinated bodies and septum; they were in contact about one-fourth of an inch from the anterior nares. Having benumbed the parts with cocaine, I introduced a probe wound with cotton, beyond this point of contact and brought out some cheesy matter of disagreeable odor. I was unable to get a thorough view of the nasal cavities at that time, so I directed her to return on the following day; then I found the œdema somewhat subsided, and saw that there was a polypoid enlargement of the little turbinated bodies which acted as a valve to imprison the decomposing material.

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*Ohio Med. Soc. Trans. Cond.

This I removed with a cold wire snare, and thus opened up a regular cavity on each side, from which I removed at least an ounce of foul-smelling, cheesy pus. I might add that this accumulation was above the middle turbinateds so far as I could make out. As the parts were thus opened, and the discharge was enabled to make an exit, it gave rise, by running down into the throat, to a very distressing nausea. This I succeeded in relieving by daily removing these secretions and spraying the nares with a solution of Peroxide of Hydrogen ("Marchand's") one to four of water, with a mixture taken internally, of pepsins and bismuth. I also prescribed champagne. Under this treatment the patient soon began to improve. She regained her appetite, the stenosis was relieved, fœtor stopped, and she began to gain in flesh and strength, and on March 4 I permitted her to go home, some ten miles, to report occasionally; she continued to improve until March 24 when she returned complaining of obstruction in the right nasal cavity. Then I removed the last bit of decomposed mucus, which had become very much hardened; since which time she has remained well. I examined her on April 26 and found the nasal cavities as nearly normal as we are accustomed to see them; there is no ulceration nor was there any more perforation of the septum, or anything to suggest that a syphilitic process had been going on.

TREATMENT OF DIPHTHERIA.

By S. H. SHERMAN, M. D., Boston.

Read before the Massachusetts Homeopathic Medical Society.

(Published by the *New England Medical Gazette*, Boston, Mass., October, 1892.)

Intelligent treatment of diphtheria as well as intelligent treatment of other diseases presupposes true conceptions of the nature of the disease. I take it for granted, with the incontrovertible evidence on the subject, that the cause of the disease, diphtheria, is the introduction into the system of microscopic germs, bacteria. Without these germs no diphtheria. The first point of attack is the natural one wherein the act of breathing they would come in contact with the tonsils and soft palate or mucous membrane of the nose. In mild attacks the disease remains a local one, the general system becoming little affected. In the severe cases it extends to almost every organ in the body.

On the supposition that the disease is caused by germs, then to cure the disease, we must destroy or antagonize them. Have we any remedy that will do this? Yes, several; bichloride of mercury is the chief, but doses sufficient to overcome the germs would be dangerous to the patient. We have long been looking for a remedy that would be a potent germ-destroyer and still one harmless to the patient. I believe that remedy is now found. Some four years ago there was sent to me a pamphlet treating of Peroxide of Hydrogen, and the author especially dwelt upon the efficacy as an oxidizer of pus. About this time I had a patient in the Homœopathic Hospital under treatment for cancer of the cervix uteri, and asked one of the staff of the able corps of surgeons what he thought of Peroxide of Hydrogen as an application to the broken down cervix. His reply was that he did not think much of it; and having such great confidence in my friend's judgment, I relegated it to the list of the numberless nostrums that we are invited to investigate. A few months ago my attention was again called to this remedy by a circular of testimonials from men eminent in the profession, and from all schools of practice. These men had proven it to be a safe and certain germicide. I sent for half pound bottle of this remedy and waited for a suitable case on which to test it. It soon came. On August 29, 1891, I was called to Mrs. B—, Athens Street, an unhealthy locality, with cesspool connecting with street sewer directly in front of the house, and the street a very narrow one. Found my patient in bed with history of three days' illness; fever, malaise, sore and swollen throat. On looking into the throat I

found tonsils, uvula, and soft palate covered with the characteristic diphtheritic deposit, and portions of it assumed that dark hue so characteristic of fatal cases, and almost certain to be followed by the septic form of the disease. There was much swelling of the sub-maxillary, sub-lingual, cervical and parotid glands. Deglutition was accomplished with great difficulty, a considerable portion of any liquid swallowed returning through the nose. There was also prominent laryngeal symptoms, croupous cough, etc., showing that the disease had already invaded the larynx. From previous experience in such cases my prognosis was unfavorable, for such cases are generally fatal even in good constitutions, under which head this patient could not be classed; her general health being rather below par. I began treatment by spraying the throat with Marchand's Peroxide of Hydrogen (medicinal) by means of a hand atomizer with hard rubber attachments, as metallic ones are oxidized by the remedy. The effect was immediately apparent on the diphtheritic deposit. I could see dissolution of the membrane about the thin edges, the fibrinous portion contracting into a smaller compass. The patient complained, however, of an extreme smarting sensation in the throat so that I felt obliged to dilute the peroxide with an equal quantity of water which did not seem to materially impair its efficacy. These inhalations or rather sprayings were repeated every two hours, and the time occupied at each seance from five to ten minutes. The dark necrotic condition had changed in twelve hours to the more common grayish-white deposit. From this time on there was a gradual diminishing of the exudation, although there was a persistent tendency to re-appearance of the membrane after it had been removed. The only internal remedies given were arsenicum, bichromate of potash, and glycozone. The arsenicum for the general condition of the system, the bichromate for the croupy or laryngeal complications, and the glycozone to destroy the bacteria, the ptomaines and leucomaines that may have found their way into the stomach, alimentary canal, the absorbent and circulatory systems. It was five days before the throat was free from diphtheritic deposit, and some eight days before the glandular swelling had subsided. There was but a remnant of the uvula left after the sloughing off of the membrane, and a loss of voice from the fourth to the fifteenth day. The patient was greatly prostrated from the first, and rallied rather slowly under the use of concentrated nutriment and mild stimulants. On the whole, considering the gravity of the case, the result was better than I have before witnessed in similar cases.

Another case worthy of mention in this connection is the following: On March the 31, 1892, was called up very early in the morning to see Master Terrance V. Freeman, aged three years and three months. The father told me the child had been ill for about a week with what he and his wife considered an ordinary cold, but soon after midnight of the present morning he was seized with a distressing croupy cough. On visiting the little patient I found the characteristic croup symptoms were apparent. I made an examination of the throat and found both tonsils covered with diphtheritic membrane. My prescription was bichromate of potash first decimal trituration in half a glass or water, and carbonate of ammonia, one drachm in four ounces of cinnamon water. These remedies were given in alternation every one and one-half hours, and the throat was sprayed every two hours, night and day, with equal parts of Marchand's Peroxide of Hydrogen and water by means of a hand atomizer with hard rubber attachments. This line of treatment was persisted in with alternate remission and exacerbation of the symptoms for five days, when the disease seemed under subjection, and convalescence secured, which continued uninterruptedly until the tenth day, when I discharged the case. This child was naturally a frail-looking child, though it showed a remarkable vitality through this severe and protracted disease. It was given from the first all the nutritious food it could be induced to take, consisting mostly of milk and bovinine. That it was diphtheritic croup was evidenced by the membrane detached and coughed up at different times during the disease. On one or two occasions the child nearly suffocated by the loose membrane being drawn into the larynx or trachea, and subsequently expelled. It is my opinion that this child would have died had it not been for the Peroxide of Hydrogen. It may seem a difficult thing to spray a child's throat effectively for five min-

utes at each seance, as the child will not voluntarily hold its mouth open. I overcome this difficulty by putting a fork-handle between the teeth on one side of the mouth, and having it held by an assistant standing behind the child and holding its head in position at the same time.

I have used this remedy, Peroxide of Hydrogen, in several other cases of diphtheria of a mild form, which would not be of interest to report as they all made satisfactory recoveries, and probably would have under usual treatment.

What is Peroxide of Hydrogen? "The name hydrogen dioxide expresses its composition, and its formula H_2O_2 represents this name. Hydrogen monoxide, H_2O, or water, can under certain conditions, be made to combine with a second molecule or oxygen, the result being a water-like liquid, H_2O_2." This agent is one and one-half times more potent as a germicide than corrosive sublimate and perfectly harmless. It is adapted to all zymotic diseases and suppurative processes. It will follow a pus sinus as a ferret will follow a rat, and be sure of destroying the pus and germs.

I alluded to this remedy some months since at a meeting of the Boston Homœopathic Medical Society, when the subject of Gonorrhœa was under discussion, and the editor of our much valued *Gazette* remarked that there was hardly anything in medical literature concerning it, and that what was known about the remedy came chiefly from the manufacturer. This caused me to look up the subject, and I find an amount of published testimony altogether too voluminous to be quoted.

MEDICAL DEPARTMENT SURGEON-GENERAL'S OFFICE.

Headquarters of the First Brigade Michigan State Troops.

CHAS. MARCHAND, N. Y.:

DEAR SIR—I promised you I would write you further about the Peroxide of Hydrogen (medicinal) manufactured by yourself.

I have cured a great many cases of throat diseases with it, and one case of severe cystitis in an old man of 70, which I had treated with mild solutions of corrosive sublimate for nearly two weeks; he was benefited a little. I then used one-half ounce of your Peroxide of Hydrogen to a pint of boiled and strained rain water, and washed out the bladder thoroughly with this,—the man got up next day and was up every day after that, was well in three days with only one injection or washing, it is worth its weight if used only in cases of cystitis.

Yours truly,

C. M. WOODWARD, Surg. General M. S. T.

Tecumsch, Mich., Sept. 15, 1892.

THE PEROXIDE OF HYDROGEN (MEDICINAL); AN INDISPENSABLE WOUND STERILIZER.

BY GEORGE H. PIERCE, M. D., BROOKLYN, N. Y.

(Published by *New England Medical Monthly*, November, 1892.)

Probably the use most frequently made of this preparation, is in the cleansing of pus cavities, and suppurating surfaces. Any trace of pus remaining in any recess which an ordinary douche will not reach, is at once sought out by the peroxide, decomposed, and brought to the surface, in bubbles of gas. It is useful in cleansing off ulcers, sloughs and gangrenous tissues, chancres, diphtheritic patches, etc., and in cleansing sinuses, and suppurating cavities, such as the pleural in empyæma, and the uterus where

there is putrid discharge, and in cleansing discharges where either puncture or free incision has been made, it is invaluable, clearing out the pus as nothing else can do. There is one class of disease where its local action as a cleanser must be seen to be appreciated; and that is as a disinfectant for gangrenous growths. In a case of extensive epitheliomia of the face, where only pilliative measures were of use, I found the Peroxide of Hydrogen a very Godsend. This case was one of the most foul I had ever witnessed. When I first saw it, the odor from it was so great that it filled the house. It was covered with a cloth into which the discharge had accumulated, thus adding a greater bulk of fetid decomposition; and to add to the horror, for such it was, upon removing the cloth, the surface was swarming with maggots, as large and active, as may be found in a heap of decomposing garbage, and not only on the surface, but they extended deeply in sinuses below the ear where it was impossible to reach them, except as they would come to the surface. My first impulse was to invoke Beelzebub for some patent exterminator, but finding myself left to my own resources, I set about bringing destruction as best I could. As time was of some moment, I removed what I could reach with dressing forceps, then douched with bichloride, 1-1000, then with Peroxide of Hydrogen, 15 vol. strength, rinsed this off with warm water, and douched again thoroughly, with permanganate of potash solution, and finally dusted the whole with beechwood charcoal, which, in addition to acting as an absorbent to the gases, made an appearance very much to be preferred to the ordinary gangrenous appearance. I ordered the cloth to be left off entirely; first, because it only added an additional fetid surface, and second, because the growth was very vascular and would bleed easily on being disturbed. It was dressed morning and night, and henceforth was kept almost entirely free from odor.

The same routine was gone through with each day. First, Peroxide of Hydrogen, which was applied by pouring it directly from the *bottle in which it came*, on absorbent cotton held by dressing forceps, so that it dropped directly on the growth; when immediately a white foam would cover the surface, from the disintegration of pus, gangrenous shreds, blood, etc. Second, rinsing off with warm water, then with permanganate of potash sol. gr. ij., cupful of water, allowing it to drip from a wad of cotton over the surface. Third, dusting with charcoal and leaving it uncovered. An immense lot of Peroxide was consumed in this case, being purchased in ½ lb. bottles, six at a time. This seems to me a very effective means of keeping clean these foul discharging growths of the carcinomatous class; the Peroxide and permanganate, being the most thorough disinfecting combination; and if employed in any case of cancerous growth, where palliation alone must be relied on, will make that life and the lives of those closely associated with it, more endurable. One important fact remains in regard to the chemical properties of the Peroxide. To be effectual it must be kept from the air, tightly corked, in a dark bottle, and in a cool place. It must be used directly from the original bottle. Do not permit the druggist to pour from one bottle to another when dispensing it, else the oxygen will escape, and it will be powerless. If when using, the white foam does not appear, it is because the preparation has lost its strength, and is absolutely of no use, of no more value than so much water, H_2O_2 must be present. It is the additional atom of O combined with the H, that does the work, by giving up that nascent O for the purpose of oxidation. The strength should be 15 volumes. The preparation which I always use is Marchand's Peroxide of Hydrogen (medicinal).

GLYCOZONE IN THE TREATMENT OF GASTRIC TROUBLE.

(Extract from *Doctor's Weekly*, October 29, 1892.)

EDITOR OF *Doctor's Weekly:*

DEAR SIR.—I received your paper this morning and was pleased to see a notice of glycozone. I have used it recently with great success in two cases of gastric troubl-

when almost all the useful remedies had failed, and with the happiest results. It is a perfect antiferment, relieving all the distressing dyspeptic trouble and aids digestion better than all the pepsins I have ever seen. Respectfully,

OLIVER D. NOSTRAND. M. D.,
286 West Fourth St.

Cincinnati, O., Oct. 22, 1892.

PEROXIDE OF HYDROGEN AND ITS USE IN EAR DISEASES.

BY WALTER B. JOHNSON, M. D., PATERSON, N. J.

Surgeon to the Paterson Eye and Ear Infirmary.

(Published by the *Journal of the American Medical Association*, October 29, 1892.)

The peroxide solution may be used advantageously in the treatment of mastoid disease after an incision has been made. The action of the remedy upon bone denuded of its periosteum, and even upon carious or necrotic bone, is unique; it causes a disintegration of the molecular particles, and they are gradually subdivided and carried away in the frothy product of the chemical action, until a healthy surface appears upon which the solution seems to have only a beneficial effect. The action of the solution upon dead bone can be readily demonstrated by placing a small portion of necrotic bone in it; the bone in a short time will begin to disintegrate and continue to do so until it is entirely divided into minute particles.

In some of the cases of mastoiditis treated, in which the denuded surface was very extensive, in from three to six weeks the bone would be in a perfectly healthy condition, the discharge of pus controlled, and the subsequent closing of the wound, when allowed, occurred rapidly and was perfectly satisfactory.

In one of the cases, in which for three years any attempt to allow the closing of the sinuses would be followed by an exacerbation of the inflammation, the carious condition was relieved and the opening allowed to close after two months of treatment.

The treatment is very simple and consists in syringing through the opening and into the meatus with a small glass syringe a sufficient quantity of the fifteen-volume solution, at each sitting, to render the pus thoroughly aseptic, then packing the ear and the wound lightly with strips of sheet lint or gauze thoroughly soaked in the same solution, great care being taken to allow the wound to close, although the packing must not be so introduced that it will prevent the free exit of any pus which may be formed during the interval between the dressings. The external incision should be made ample and if the packing does not prevent the opening from closing during the progress of the treatment it must be reopened with the knife. Glycozone has been suggested for use in keeping the wound open, being used instead of the Peroxide in the dressing.

The result of this line of treatment, which has been followed in a considerable number of mastoid cases, has indicated the possibility of a degree of conservatism in the treatment of mastoid disease which is very desirable.

All the cases treated have done well, no deaths have occurred, and in no case was it considered necessary to scrape the bone or to remove any portion of it, while the period of time necessary for the wound to assume a sufficiently healthy condition to render it advisable to permit it to close, did not seem longer than the time which must ordinarily elapse after the operation for thoroughly scraping the mastoid, and was much shorter than the time required before the wound produced in chiseling the mastoid could possibly be allowed to close.

Special care should be taken to keep all the applicators or sprays, used either with the Peroxide of Hydrogen solution or Glycozone, perfectly clean, especially in case of

mixtures of glycerine and Peroxide, which should be made fresh every second or third day, to prevent the possible formation of formic acid; only silver, hard rubber, glass or porcelain, should be used for measuring purposes.

If care is taken to properly keep the solutions, they are perfectly harmless and calculated to be of inestimable benefit to all who use them.

THE OPERATIVE TREATMENT OF FISTULA-IN-ANO.

By LEWIS H. ADLER, Jr., M. D.,

Adjunct Professor of Diseases of the Rectum, Philadelphia Polyclinic and College for Graduates in Medicine.

Read before the Phila. County Medical Society, November 23, 1892.

(Reprinted from the *International Medical Magazine* for October, 1892.)

THE AFTER-TREATMENT.

After the operation of fistula *in ano*, I am in the habit of packing the wound with iodoform gauze, which is left undisturbed for twenty-four hours. This is done to prevent subsequent hemorrhage. A pad of gauze and cotton and a T-bandage are next applied.

The subsequent dressing of the case should be daily attended to by the surgeon himself. The parts should be kept perfectly clean, and the wound syringed with Peroxide of Hydrogen (Marchand's), carbolic acid solution, etc., after which a single piece of iodoform gauze laid between the cut surfaces of the wound will be all the dressing required.

In the after-treatment of these cases I have seen the healing process greatly retarded by the excessive packing of the wound with lint, or delayed by the undue use of the probe. Such interference is to be avoided.

If the granulations are sluggish and the discharge is thin and serous, it will be well to apply some stimulating lotion, such as Peroxide of Hydrogen, or a weak solution of copper sulphate (two grains to the ounce).

The surgeon should be on the watch during the healing process to avoid any burrowing or the formation of fresh sinuses. Should the discharge from the surface of the wound suddenly become excessive, it is evidence enough that a sinus has formed, and a careful search must be made for it. Sometimes it is under the edges of the wound that it commences, at other times at the upper or lower ends of the cut surface, and occasionally it seems to branch off from the base of the main fistula.

Pain in or near the seat of the healing fistula is another symptom of burrowing, and when complained of, the surgeon should carefully investigate the cause.

After an operation for fistula, the patient's bowels should be confined for three or four days, for which purpose opium is usually given. At the end of this time the bowels may be opened by the administration of a dose of castor oil, and so soon as the patient feels a desire to go to stool, I am in the habit of ordering an enema of warm water to be administered, which has a tendency to render the fæces soft and fluid and hence to make their passage easier. The patient should be kept in a recumbent posture until the fistula is healed and until the bowels are moved; the diet should be liquid such as milk, beef-tea, and broths. The time required for a patient to recover after an operation for fistula *in ano* varies with the extent of the disease. In an average case it will be necessary to keep the patient in bed for two weeks, and confined to the house for a couple of weeks longer.

ABSTRACT FROM A TREATISE ON DISEASES OF THE RECTUM, ANUS AND SIGMOID FLEXURE.

By JOSEPH M. MATTHEWS, M. D.

Prof. of Principles and Practices of Surgery, and Clinical Lecturer on Diseases of the Rectum; Kentucky School of Medicine, Louisville, Ky.

Page 188.—After the operation is performed, Dr. Matthews writes as follows:

I then syringe the cavity out freely with a solution of bichloride of mercury (1 to 5000). Then a tent made of iodoform gauze is introduced into the cavity, just as much as it will hold. After the expiration of twelve hours, I withdraw the iodoform gauze and allow any accumulation to pour out freely. I have used the bichloride solution here first, because I believe it to be a good antiseptic and at the same time a good stimulant to the cavity. However, afterward I substitute another agent—viz., Peroxide of Hydrogen. Of course our great object in dealing with cavities of this kind are twofold: First, to stop suppuration; second, to heal the diseased structure. For preventing suppuration, we have chiefly relied upon solutions of bichloride of mercury and carbolic acid. Every surgeon is well aware of the fact that dangers attend the use of carbolic acid in the treatment of suppurating diseases, and the too free use of the bichloride of mercury in large suppurative cavities might not only cause too much inflammatory action, but also produce a general effect upon the system which would be shown in ptyalism. We have in a strong solution of Peroxide of Hydrogen a substitute for these two without any of their attending dangers. Undoubtedly the best preparation of this agent is Marchand's Peroxide of Hydrogen (medicinal). His fifteen-volume solution will retain active germicidal power for many months, if kept tightly corked in a cold place. It can be used, of course, in any strength that the surgeon desires. Marchand has devised a hand atomizer and ozonizer for the purpose of using the agent in an easy manner.

The abscess cavity is injected once a day with this agent, either pure or diluted with water, from three to ten parts, and each time the tent of iodoform gauze is pushed gently into the external opening, but not so as to fill the cavity. As the healing process goes on, a less amount of gauze is used. If large rectal abscesses are treated in this manner, the number of cases of fistula will be greatly reduced.

SOME OF THE USES OF PEROXIDE OF HYDROGEN IN GENERAL SURGERY.

By THOMAS H. MANLEY, M. D., New York

(Published by the *New England Medical Monthly*, Danbury, Conn., Dec., 1892.)

Since Marchand placed upon the market a pure, unadulterated Peroxide of Hydrogen, and Morris, of New York, called attention to the marvelous power of this preparation as a deodorizer, the profession have very generally employed it in such pathological conditions as will enable us to apply it directly to the diseased surfaces. In general medicine it has been employed on an extensive scale in the phagedenic, sore throat of malignant scarlatina, diphtheria, and other maladies.

In surgery, it has been particularly recommended in non-malignant, suppurating sores.

Since it has now come to be very generally known, that with very few exceptions all chemical solutions of sufficient potency to kill germs, possess such irritating properties as to interfere with healthy cellular proliferation, there has been a demand for

something which might nullify germ activity, and at the same time in no way interfere with the recuperative energy in the histological elements. In a large class of cases Peroxide of Hydrogen seems to provide this want.

In the Harlem Hospital and Dispensary service, the Peroxide, Marchand's medicinal, is largely employed; and, in appropriate cases, with better results, than with any other agent.

It seems to possess a special affinity for the lethal elements, in all suppurating processes, which tend to run into chronicity.

We have largely employed it in those cases of fistular sinuses, so seriously resulting from suppurating lymphatic glands in children and adults; as well as in those buboes which are sure to heal and discharge, for a long time, a sero-purulent matter.

The only class of sinuses in which its use should be employed with caution, are those in which the fistula extends into a lesion in the osseous elements.

In many cases, in which a long, deep rent has been made in the tissues, in strumous subjects, in which healing processes are delayed, its employment is very satisfactory in effecting primary union. Now, whether it acts as antiseptic; or, by imparting fresh vitality to the cells, is a question by no means settled.

When we use it, it should be applied in such strength as different cases require. In foul-smelling, copiously discharging processes, it may be used in a concentrated form, while in milder cases, particularly in children, it should be diluted.

In my own private practice none has given me so much satisfaction as that manufactured by Chas. Marchand, and as we have seen in Dr. Squibb's "Ephemeris," for this year, the preparation seems to be regarded by chemical analysis, to maintain a high and uniform standard of strength and purity.

INTESTINAL OBSTRUCTIONS.

DIAGNOSIS AND TREATMENT.

By FREDERICK HOLME WIGGIN, M. D., New York.

Attending Surgeon City Hospital, Blackwell's Island.

(Extract from the *Medical Record*, July 23, 1892.)

Irrigation of Abdominal Cavity.—As to the irrigation of the abdominal cavity, the practice inclines toward the use of plain water or so-called natural salt solution, six-tenths per cent. My own experience and observation lead me to believe that many of the complications following laparotomy can be traced directly to the use of chemical solutions during the operation, either for irrigation, for disinfecting the hands of the operator, his instruments or sponges. In a case where the abscess is circumscribed, it is bad practice to irrigate, owing to the danger of infecting the general cavity. In all aseptic cases irrigation should be avoided. When irrigation is necessary, while the normal salt solution is best, still, in some cases, I believe this may be followed by a second douche containing a small quantity of hydrogen dioxide, I have used it for several years in all kinds of surgical work, and once in the general abdominal cavity, in a case already alluded to (the patient dying shortly after the operation, no deduction can be drawn from it), and where pus was present, have found it in proper solution more efficient and less irritating than anything else. In some of the New York hospitals it has been used for irrigating the pleural cavity in empyema, and it has proved satisfactory. I have been unable to find any record of a case where this compound has been used for irrigating the general cavity. In the letters already referred to, Dr. Senn says: "Have used the hydrogen dioxide in cases of limited peritonitis, and should not hesitate to use it in the diffused form "

Dr. Mann says, "And I have never used hydrogen dioxide in the general cavity, but have applied it to the cut ends of tubes, holes in the intestines and bladder, etc., with good results."

Dr. Clement Cleveland says, "I have never used the dioxide in the peritoneal cavity. I have used it pure in the uterine cavity, in puerperal septicæmia, with excellent results."

Dr. Robert T. Morris writes, "In localized septic peritonitis, where I have occasion to expose directly the affected locality with retractors. I pour in the $H_2 O_2$ in full strength and without any warming whatever. After allowing it to remain for a minute or two I sponge out and repeat, leaving the second lot for five minutes, sometimes not removing it all, but putting my gauze wick down into it, and allowing it to be sucked up at leisure by the drainage wick. I have used it twice only in general septic peritonitis. One of the cases was an appendicitis (perforated), with the patient moribund at the time of application of the $H_2 O_2$, I poured in a very large quantity, enough to bathe all of the abdominal organs; a very little hot water was poured into the peroxide just at the moment of using it, to 'take the chill off.' The peroxide was then siphoned out and the patient was made very much easier by the treatment, although he finally died. The other patient died too. The case was one of general septic peritonitis that had gone on to suppuration after removal of a gangrenous ovarian cyst. The post-mortem examination showed that the $H_2 O_2$ had cleansed the cavity beautifully, and although my patient died, I nevertheless obtained the impression that one has after such observations, that the $H_2 O_2$ was very useful, and evidently harmless in itself. There are lots of cheap peroxides on the market that contain acids, and such would be harmful." (See article by Robert T. Morris, page 72, also article by Dr. H. F. Wiggin, page 92.)

PEROXIDE OF HYDROGEN.

By L. C. SCHUTT, M. D., Toledo, Ohio.

(Published by the *Toledo Medical Compend*, December, 1892.)

Referring to Peroxide of Hydrogen (medicinal) Dr. Schutt writes as follows:

Diphtheria —As a local application in this disease, Marchand's Peroxide of Hydrogen (medicinal), can be used full strength, but in the majority of cases it is better to dilute it with from 20 to 30 per cent. of water. It may be applied with a brush or atomizer, and used as often as the severity of the case may require.

Pitting of Small-Pox.—The topical application of peroxide of hydrogen or glycozone is very beneficial. It allays the irritation of the skin and lessens the pitting and force of the disease.

The local application of the peroxide in hay fever has proven very beneficial when mixed with an equal quantity of water and glycerine. It should be used at the very outset of the disease.

As a Cosmetic.—When applied to the face it will make imperceptible a dark downy growth on the face when the hairs are numerous and fine and cannot be removed by electrolysis. It should be applied several times a day with a camel's hair brush until the hairs are thoroughly whitened and after that as often as necessary. The grease which adhers to every hair should be removed by applying a solution of powdered borax in water.

In deep cuts and ulcers you will find the greatest benefit from the use of peroxide of hydrogen.

I will report one case in which very decided benefit was obtained from the use of this preparation.

Mr. P. O. H., a young man 23 years old. He received an injury to his right hip, while helping to unload a cannon. It terminated in hip-joint disease, which confined

him to the house for more than a year. Finally suppuration occurred, leaving him with two sinuses and several openings. All kinds of washes were used but the pus kept up. At last I commenced treating it with peroxide of hydrogen, using it pure and diluting it with water. We used it every day for seven months at which time all discharge of pus had stopped and the openings nearly closed. I am sure no other bactericide could have been used so long and with such good results, without injury to the parts or general system.

SURGICAL MEASURES OF RELIEF IN STENOSIS OF THE UPPER AIR PASSAGES.*

By THOMAS H. MANLEY, M. D., New York.

During the past ten or fifteen years the discussion of the etiology, pathology and surgical treatment of stenosis of the ærial passages, particularly in children, has occupied an important position in medical literature, both home and foreign.

Yet with all that has been written on this subject, it must be admitted that the profession is in anything but accord on the most appropriate measures, either prophylactic, or remedial, in those maladies which jeopardize life through impending asphyxia or apnœa.

It was hoped with the application of the invaluable apparatus of Dr. O'Dwyer that, at last, the most formidable obstacles in the way of treatment had been forever removed, that the scalpel and tracheal tube might be laid aside, and that hereafter relief-measures would be as prompt and bloodless as they were efficient and permanent.

But it was soon discovered that, like every other relief-measure, intubation has its limitations; that there is a considerable proportion of cases in which the perforated, laryngeal plug may, when introduced, destroy every possible prospect of recovery. Our aim should be in all cases, to occupy a middle ground; as neither too zealous partisans of the one, nor uncompromising foes of the other. Some would impose so far on the credulity of their brethren as to have them believe that intubation is the sovereign remedy when applied early and skillfully. Others there are, who have cast it aside altogether. Of this latter I saw a practical proof in the Princess Augusta's large ward for children in the Frieriechshal-Hospital in Berlin. Here their experience with intubation had been so unfortunate that they had discarded it altogether. Hence, while we all agree that divulsion of the laryngeal chink through the buccal cavity occupies an important place in surgical therapy, it constitutes but one of our resources. In the controversial side of the question, it is not my purpose, at this time, to enter.

The conditions that give rise to a mechanical impediment to respiration in the upper air passages are dependent on inflammation—infectious, specific, neoplastic and traumatic.

The fundamental principle underlying every phase of treatment, of whatever description instituted, is to secure a patent air-passages until nature has removed the barriers to normal respiration. To most safely accomplish this purpose we must depend chiefly on three agencies: First, on constitutional treatment, which is more or less applicable in all phases of laryngeal stenosis; second, on local medicative measures, third, on surgical invention.

As the surgeon's aid is seldom invoked until the time is past for internal medication, only the second and third of these agencies will be considered here.

For the first of them, there are but two substances with which I am acquainted, that possess such properties as will commend them in the majority of cases. I may add

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*Read before the Section of Pædiatry, Academy of Medicine, New York, Feb. 9, 1893. Published by *The Medical and Surgical Reporter*, of Philadelphia, Pa., Feb. 25, 1893.

parenthetically, that unless the patient is on the border line of the moribund state, local measures should be pressed with energy for a short time before surgical intervention is resorted to.

Mercury pre-eminently occupies the first position. First, because of its well known power as an antiseptic agent; and secondly, for its effects on the general system when taken up by absorption through the mucous membrane. It may be administered by fumigation—when calomel is incinerated; or through the spray—when we employ the bichloride solution of a strength varying from 1:500 to 1:3000 according to the age of the patient, its impression on the system, or the urgency of the symptoms. The objections to the employment are the possibility of ptyalizing the patient or salivating the nurse or attendant. Besides, though this agent possesses active bactericide powers, it it not a deodorizer.

In many cases of an infectious or gangrenous character extending into the larynx or trachea, the ideal solution is one which is gentle and simple in its application, but energetic in action; one best tolerated and possessed of the greatest affinity for the necrotic residue of diphtheritic or other inflammatory products. To attain this end there is nothing with which I am familiar, which may be administered so continuously as the peroxide of hydrogen medicinal.

An eminent medical authority* has recently warned the profession not to use this agent in throat troubles, because, as he alleges, it may cause diphtheria itself. This view is totally at variance with clinical experience and with our knowledge of the fundamental etiology of the disease; though we must concede, if an inferior quality be used, or it is employed in too strong solution, an exudate is formed, but this exudate must be rather attributed to its injudicious employment than to any inherent power of the drug to produce such exudate. In all cases, when we employ this gaseous agent we should be assured of its purity and standard strength; hence it is my custom to employ Marchand's medicinal, alone, when it can be secured. The inhaler which goes with this medicament, in my hands, in the hospital and elsewhere, has served an admirable purpose in pharyngeal or laryngeal affections. "The immense number of unsophisticated medical men all over this country whose anxiety is for new and effective remedies, and who are stimulated by these miserable surroundings"† may be safely trusted with the best and safest in the matter of chemical solutions, as in the selection of wines, meat juices, proprietary medicines or other pharmaceuticals.

When it appears futile to persist further with local applications, and the symptoms of approaching asphyxia are urgent, the time has arrived for prompt surgical interference. It is well known that in tracheotomies the results following, depend mainly on two factors, viz: the violence of the constitutional infection, and the manner in which the operation for relief is performed. The former is beyond our control, but not so with the latter. For, with the aid that modern surgery has placed within our reach, the technique of opening the air passages above the sternum has been greatly simplified. The elder Gross regarded tracheotomy as one of the most formidable operations known to surgery.

The dangers immediately connected with the surgical technique of a tracheotomy are:

(1) Those which have reference to pulmonary anæsthesia.
(2) Hemorrhage.
(3) Shock.

With every one who has ever administered an anæsthetic, or seen it given to one with an embarrassed respiration, it is needless to rehearse here the difficulties in the way. In the first stage of anæsthesia the little one struggles and strangles so that the anæsthetizing agent must be given intermittenly. As the second stage or anæsthesia is reached a deep cyanosis sets in. With the accession of the third stage the corneal reflexes are

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*Dr. A. Jacobi, Note on Peroxide of Hydrogen. *Archives of Pediatrics*, Dec., 1892.
†*Ibidem.*

paralyzed and the asphyxia deepened so that the operator is warned to hasten on or death will quickly end the scene. But our patient is a child, and it is a matter of common observation that children, proportionately to their age, take a large quantity of anæsthetics and come from under their influence very quickly. Hence, under the circumstances here considered, the circulation already toxemic must be further super-saturated with another lethal agent, and along with this, the fear of the patient's returning consciousness hurries the surgeon on with the procedure in which it is always imperative to proceed with caution and deliberation. Anæsthesia is, it must be admitted, one of the positive dangers in opening of the trachea.

Without question the next difficulty in this operation is profuse hemorrhage. Here the escape of blood is dangerous in a dual capacity. First, through mortal anæmia, and next through leakage into the trachea inducing fatal asphyxia, or by being sucked into the bronchial radicles and causing septic pneumonia. As the trachea in the child is deeply lodged beneath an immense network of blood vessels which lie immediately under the skin, the deep cervical fascia and over the thyroid isthmus, the division of the deeply situated parts is not unlike the splitting of a saturated sponge. Nevertheless, if ample hæmostatic precautions are observed, after the first gush in penetrating the deep cervical fascia, it will be slight and neither will annoy the operator nor endanger the patient.

In May, 1890, Paul Reclus, in the *Gazette Hebdomadaire*, published his remarkable contribution on "Cocaine Analgesia." The year preceding, Prof. W. W. Dawson had presented an able essay entitled "Bloodless Tracheotomies."* Although Reclus reported more than two hundred cases in which he had successfully operated under cocaine, he mentioned none for tracheal stenosis. After I had carefully read the essays of both the Ohio and the French surgeons, it occurred to me that, by a combination of both expedients, the ideal tracheotomy operation was at last secured. Within one month of the publication of Reclus' essay I was favored, at the Harlem Hospital, with an opportunity of testing for the first time, and estimating the full value of, a surgical procedure which I have designated "Tracheotomy by the Reclus-Dawson Method."

I, personally, claim nothing for myself in connection with this invaluable device, save in evolving a new operation by a combination of analgesia with hæmostasis, and priority in being the first to operate by this method and to publish its history and technique. This I did in the *Journal of the American Medical Association, 1891.*

Though I have had four opportunities of employing it in the adult, up to this time I have had but one child, an infant, on which to test its merits. This was a patient of Dr. Murray's, but two months of age, which was suffering of submucous tubercular abscess of the larynx. All my patients recovered.

In a nutshell, its technique is as follows: Rigorous antisepsis; a one per cent. solution of hydrochlorate of cocaine hypodermically administered after Reclus' plan; the drug hypodermically employed, never to exceed the maximum dose by the mouth. I always douche the surfaces of the integument, either by a spray from a siphon of carbonated water, or else pure cold water from a height which accomplishes the same end, before I make the first incision. The cocaine injection serves a triad purpose in these cases; first, as an analgesic; secondly as a cardiac stimulant, and thirdly, as a styptic or hæmostatic. In these cases which we tracheotomize for infectious or acute inflammatory obstruction, and in which patency of the opening is but a temporary expedient, I am confident that the best tracheal tube is none at all. In this infant of two months, by passing two sutures through the divided tracheal walls on either side an ample air vent was effected.

I am confident that as the new procedure is more generally adopted, tracheotomy will regain its lost ground. For by it, when it succeeds, deglutination is not interfered with, perfect drainage is secured and the inconvenience and danger always attendant on tubation of any description, is obviated. It is unnecessary to add that by it, too, the dangers of collapse and shock will be minimized.

**Jour. Amer. Med. Ass'n.*, July 13, 1892.

DISCUSSION ON DR. MANLEY'S PAPER.

(Reported Stenographically by J. J. Sullivan, M. D.)

Dr. Chaffee, of Brooklyn, said that he believed that if Dr. Manley's method of using cocaine was adopted, it would make tracheotomy more popular than ever before, and operators would not have the dread of the operation as they have at the present time. He was a great admirer of intubation but he never regarded the two operations of tracheotomy and intubation as direct rivals.

Dr. Stewart was very glad to hear Dr. Manley stand up for mercurialism in the treatment of diphtheria. He always found that the further he departed from the use of mercury in the treatment of diphtheria, the more apt the patient was to die, and he has never seen a case of ptyalism in a child with true malignant diphtheria from the use of mercury. He still used bichloride in combination with Marchand's peroxide of hydrogen (medicinal) with the best results possible.

He used a five per cent. solution of Marchand's peroxide of hydrogen in water, and about 1-3,000 of the bichloride. He also gave the same drug internally and has had much better results than formerly with the old, iron, chlorate of potash and like remedies.

Dr. Fruithight said he would like to bear testimony to the good results he has secured in the treatment of diphtheria by calomel fumigation. He has used calomel fumigations recently in three very grave cases and they all recovered. He has used as a local remedy Marchand's peroxide of hydrogen.

Dr. Stanton has been using bichloride of mercury in the treatment of diphtheria for the past four or five years, and he regretted to say that his experience was disappointing. So far as local treatment is concerned, he has used a spray of Marchand's Peroxide of Hydrogen, and he has never found any reason to regret its use. He has read the criticisms of Dr. Jacobi, and he never experienced any such results as he has seen from the use of Peroxide of Hydrogen. He, Dr. Stanton, uses a fifteen volume strength of the Peroxide, and dilutes it one-half; spraying the affected parts every two hours with it.

Dr. Dillon Brown stated that his experience with the Peroxide of Hydrogen has been the same as Dr. Jacobi's, but he considers this condition referred to, to be due to the irritating effect of the acid in the Peroxide of Hydrogen. He still believed that Peroxide of Hydrogen was the best remedy they had in the treatment of diphtheria.

The way to overcome this acrid condition of this solution was to add to the fifteen volume solution, sufficient ammonia to make it neutral, or if they wished to dilute the Peroxide, to dilute it with lime water which does not in any way effect its chemical properties, and the results are just as good.

They do not then get those lesions that affect the mucous membrane as described by Dr. Jacobi. So used, he considered the Peroxide of Hydrogen the best remedy they had in the treatment of diphtheria. The acid he spoke of contained in the solution was simply an impurity which it was expensive to get rid of, and consequently more profitable to leave in.

Dr. Manley in closing the discussion said that in reference to the question of Peroxide of Hydrogen increasing the area of the membranous exudation it cannot be denied that when they sprayed the throat with Peroxide of Hydrogen there was a membrane at once formed, that is, if they called a deposit of mucus coagulated by the acid of the Peroxide of Hydrogen, a membrane, they had such a membrane every time they employed the Peroxide, as they would have a membrane if they were to use a strong solution of nitrate of silver, but nothing more.

He regarded intubation as a wonderful thing, but he would emphasize the fact that it had its limitations. In intubating the larynx, the great difficulty was the mechanical one in getting a tube that will adjust itself to the lumen of the passage. These passages are very irregular in form and outline, and if the tube did not fit, it acted as a foreign body, giving rise to irritation and necrosis.

APPENDICITIS.

By ROBERT T. MORRIS, A. M., M. D., New York.

A Clinical Lecture at the New York Post-Graduate Medical School, February, 11, 1893,

(Reprint from the *New England Medical Monthly* for April, 1893.)

Gentlemen:

"How many appendicitis patients have you in there?" I asked when driving by a grave-yard in company with a physician, one day last week. "Two of my own and four that were seen in consultation," he said. "I was just counting them up when you spoke, and I feel that none of them would be there if they could have had timely operations."

If the grave-stone of every appendicitis patient who need not have died were to give out a light, every cemetery in the land would shine at night.

Before removing the appendices from our two patients this afternoon, I will show two fresh specimens which illustrate widely different types of the disease. This first wicked looking specimen I removed on Tuesday from a patient who was in the eleventh day of an acute general peritonitis. The patient was then moribund. To-day he is recovering. There is always a question as to the policy of operating upon such patients but accumulative experience enables us to attack cheerfully the most vicious of cases.

Up to the year 1890 we lost a good many appendicitis patients after operation, but from the vast mass of recent data, we have reduced a few apparently trifling changes in technique that give our patients chances for life; changing the whole outlook of these operations, just as ideas about peritoneal operations in general underwent a transformation a very short time ago.

Again let us look at this dark and ragged specimen which has been slit along the free border to show the interior. A stricture at its middle occludes the lumen.

The stricture is a hieroglyphic in high relief and we can read it. It says that the patient once upon a time had appendicitis, that a bit of mucous membrane was murdered and cast out into the bowel; and that the resulting ulcer filled the gap with a collar of connective tissue.

When the stricture contracted it entrapped two fecal bullets in the distal half of the lumen and left the appendix loaded. Last week the bullets went through the wall and shot the patient.

The physician who asked me to see the case was doubtful about its being one of appendicitis, because there was no particular pain at McBurney's point and because there was no dullness on percussion in the right inguinal region. Nevertheless, he remembered my earnestness in insisting that acute peritonitis in adult males and in children of both sexes was a fire alarm calling the surgeon to come quickly and put out the appendix. The reason why there was no particularly tender spot and no inguinal dullness was because the abdomen was tense and shiny with acute general peritonitis and because one of the abscess cavities in the inguinal region was stretched with hissing, stinking gas. How did we find it out? We looked! When I had placed the patient in Trendelenburg's position and had evacuated a large amount of pus and gas, one of the consultants thought we had done enough. After sterilizing the abscess cavity with peroxide of hydrogen (Marchand), I proceeded to separate all adhesions and finally came to a large secondary cesspool of pus, containing the riddled gangrenous appendix.

Now the patient can live.

Don't forget what happened after it was thought advisable to rest content with draining the first abscess.

A word about opium. I am about through with opium in any form in peritonitis of any sort. Mr. Tait, I believe, says that he has banished it from his pharmacopœia altogether.

My two definitions for opium in peritonitis are these:

1. A drug which stupefies the physician who gives it more than it does the patient who takes it.

2. A drug which generally relieves the distress of the physician who without it would be compelled to do something rational for the patient who has put confidence in him.

Opium and peritonitis breed a vampire which lulls the patient to sweet repose while his life is being sucked out, and the doctor is looking the other way. Remove the cause for peritonitis when you can. Remove the products of peritonitis when you can do nothing better. Avoid as carefully as possible the teachings of our honored preceptors who did the best they could in the days when symptoms were treated and not prevented.

An abdomen swollen with peritonitis looks to me like a great big ripe boil and needing the treatment that boils usually receive.

Figure 1.

Longitudinally split appendix. Perforated by concrements. Gangrenous.
1. Point of exit of fecal bullets.
2. Old stricture occluding lumen.
3. Hard, dry fecal bullets.

Here is the second appendix. It is apparently normal as you observe, excepting at the tip where it is rough and clubbed. I removed it last Thursday from a young man who three weeks ago was laid up for a week with colic and vomiting, associated with swelling and tenderness in the right inguinal region. He found that "something pulled" whenever he made exertion, and the tender spot remained. The roughness at the tip shows where adhesions fixed the tip of the appendix to parietal peritoneum, and that is

what caused the pulling and the tenderness. His appendix is what I call a "growler."

The first patient of to-day's clinic is ready. The history is briefly this: Shortly after childbirth, fifteen years ago, agonizing colic, bilious vomiting, rigors, febrile reaction, a lump in the right inguinal region. Acute attacks have recurred several times and of late years the lump has been permanent. Intestinal obstruction has lately become a serious feature of the case. My analysis of her symptoms is this. At childbirth a foreign body in the appendix was compressed until it injured the mucous tube and allowed bacteria to enter the adenoid tissue. The colic means that the intestine was trying its muscles on disagreeable company, which needed to be forced away. The colic is sometimes awful, and always unnecessary, if the surgeon is near. Bilious vomiting means that absorbed septic matter was being excreted by the liver, and the ptomaine bearing bile on reaching the duodenum mischievously reversed the lever of the duodenum and flooded the stomach with bile. A reversed peristalsis caused by certain irritants is familiar to some of you as a laboratory experiment. The rigors and the febrile reaction meant that microbe products were poisoning sympathetic nerve centers. The inguinal lump indicated that local peritonitis had welded several structures together in order to protect the peritoneal cavity against the company that the intestine was trying to rid itself of. The intestinal obstruction means that adhesions have contracted.

The peritoneal exudates make a lymph cake. Sometimes this lymph cake is a simple pound cake, that the peritoneum digests as soon as the appendix has been temporarily appeased. Sometimes it is a cream cake, and the pus if not absorbed, finds its way into a large vein or into the ureter or into the bladder, or somewhere where no reputable surgeon would think of making an opening. Nature tries to do some surgical work but she is a good deal more of a success at making lilies.

Then again, we are never sure when nature prefers to save the patient or to encourage a particularly fine bed of microbes. It is a pretty conceit for us to assume that she cares more for one specimen of *homo sapiens* than for a whole lot of *streptococcus pyogenes aureus*. The presence of a lymph cake in the vicinity of an appendix vermiformis is the piteous signal of the peritoneum for help, and the sympathetic surgeon must respond instantly, bearing in his hand the little wand that will vanquish the witch. A diseased appendix which is not walled in with lymph cake needs equally prompt attention by the surgeon.

Under procrastinating medical treatment by the good physician, a surly appendix may often be coaxed back into its hole where it mutters and sulks and prepares for another spring at the patient.

Our patient is now placed in Trendelenburg's posture. The reason for that is, because we do not want to play a jack-in-the-box game with intestines, but prefer to attend strictly to business. Another reason is because we wish to have pus run out instead of running in. Another reason is because one look at the involved parts is better than two feels and four guesses. The side of the appendix is exposed through the customary lateral incision. The lump is found to consist of a heterogeneous mass of omentum, mesentery and ileo-cæcal intestine, and firmly welded together. When the bass are biting fast and my line gets into this kind of a snarl I cut out the whole snarl at once and throw it away. I believe that we must do that in some cases of these old appendicitis with intestinal obstruction, but I have succeeded in undoing so many similar snarls that we will try it once more. Guided by the small granular lumps of fat we separate the adhesive omentum. That is easy. Guided by the direction of the blood vessels, we separate the adhesions of the mesentery. That requires sharp eyes, for the bowel as usual rolled itself up in mesentery when it first became frightened. Guided by the direction of muscular tissue we slowly work the iluem free. Here comes a sudden burst of pus which runs out upon the abdomen because of the Trendelenburg's position. The abscess cavity is irrigated with peroxide of hydrogen (Marchand). This is done because the peroxide is a searching sterilizer and it throws pus and debris out of nooks and crannies. It is easy to observe that the appendix is practically gone into solution in the abscess cavity, and here I find a piece of apple core encrusted with phosphates that has caused all the trouble. The

cæcum has disappeared. It was drawn up by adhesions, strangled, and forced to join the abscess. There is no ileo-cæcal valve but in its place a rigid, narrow, tortuous channel about five inches in length.

Gaze upon this wreck of vitals, produced progressively by successful attacks of appendicitis, and then consider the responsibility of the physician who in appendicitis cases advises the patient to wait. How easy an early operation in this case! How desperate the operation now! I ought to respect the intestine right here, but the patient has been absorbing pus for several months so I will make a fecal fistula to relieve the ileum, and resect the intestine a month later. The shock we will treat with nitrate of amyl to the nose at first and then hypodermic injections of nitro-glycerine and strychnine, together with the routine resources of hot bottles, hot rectal injections and elevations of the legs.

Our next patient is genial Dr. Robert Kennedy, Jr., of proteinol fame, whom most of you know. Judging from his appearance he has never lived upon anything more artificial than a thick tender porter house steak. His appendix must come out, however. Two years ago after exposure to cold sea winds, the Doctor was suddenly attacked with colic and abdominal cramps, but at the end of a week was practically well again. Eight months ago he was again attacked in the same way, but with added symptoms of rigors and vomiting, together with pain and tenderness in the right inguinal region. After subsidence of the acute symptoms there remained a persistent feeling that something was wrong with the appendix. He was constantly inclined to press with his hand over the region of the appendix and found discomfort in certain positions when sitting. That is a pretty good history of early infectious appendicitis.

After his history had been taken, our conversation was something like this:

Q. Well! What do you advise me to do about it?

Ans. That depends. If you are always where good medical attendance is within easy reach, it would be as well to pay no particular attention to the appendix at present.

Q. But I travel a great deal, and am liable to be caught with an acute exacerbation at any time and place, am I not?

Ans. Certainly.

Q. Is the next attack likely to be more severe or more mild than the last one?

Ans. No one can possibly predict!

Q. Is sloughing or perforation as likely to occur in the third attack as in the tenth one?

Ans. Surely!

Q. Can I recover completely and have no further trouble without an operation?

Ans. Yes!

Q. Am I likely to?

Ans. No!

Q. What are the dangers of an operation now?

Ans. I have never been anxious for my patient no matter what the complications were, excepting in desperate cases with pus and septicæmia to deal with at the time of operation; when these two features were absent the technique which buries the stump of the appendix and which ensures against ventral hernia later has given me perfect ease and comfort in a responsible position, and the patients have made uninteresting recoveries.

Q. The greatest danger from the surgeon, then, is when there is greatest danger from the disease?

Ans. *A la bonne heure!*

Q. Well, I like the opposite combination better! If by having my appendix cut now, I can escape the ever present dread of exacerbation and can save the time lost in attending to mild attacks. If you do not now dread the operation and if you will dread it when I am in danger from the disease, why is it not good business judgment to decide that the appendix should come out?

Ans. That is for you to say. I am at your service.

Q. When will you take it out?

Ans. On Saturday, 4.30 P. M., if you are willing to go before my class at the Post-Graduate Medical School. The matriculates have shown unusual interest in my appendicitis cases there.

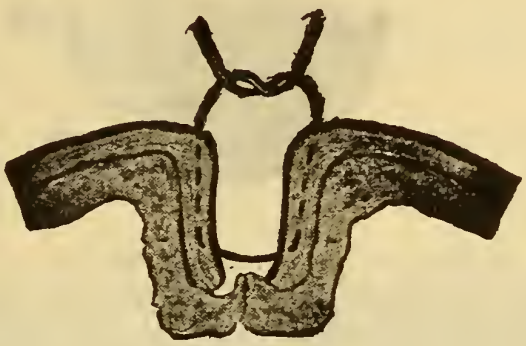


Figure 2.

Final. All right! Glad to give them points! I'll be there!

And here he is. A man in fine health, suffering only a little discomfort, deciding to have his infectious appendix removed as a plain matter of forethought and discretion.

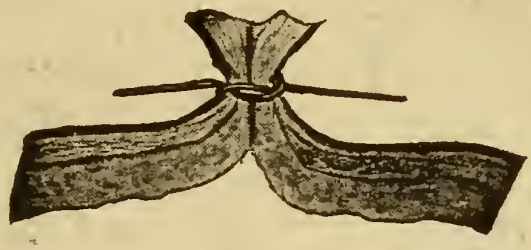


Figure 3.

The patient being placed in Trendelenburg's position my incision is made over the normal site of the appendix. The incision is about two and a half inches long, through skin and muscle and about one and one quarter inches long through transversalis fascia and peritoneum. Intestine presents, I see by the longitudinal band that it is colon.

Figure 4.

Transverse section of longitudinally split appendix. Moderate exudation.
1. Mucosa and adenoid coat bulging a little.
2. Submucous connective tissue thicker than the combined muscular and peritoneal coats.
3. Muscular and peritoneal coats.

Passing it through the fingers in a direction which will put the cæcal peritoneum upon the stretch, we soon come to a halt. The appendix must be very near. Here is its base presenting in the wound. I pull the appendix out through the opening. It is about

five inches long, hard and congested. While an assistant holds it with forceps, the mesentery of the appendix is ligated with cat gut and divided, the peritoneal and muscular coats of the appendix are clipped through at the cæcal junction. The mucous

Figure 5.

Transverse section of longitudinally split appendix. Exudative. A "pop corn" appendix.
1. Mucosa and adenoid tissue bulging prominently.
2. Submucous connective tissue much distended.
3. Combined muscular and peritoneal coats.

tube is ligated well down into cæcal mucous membrane with the finest of eye silk. The peritoneum of the cæcum about the base of the appendix is scarified with the point of a needle until pink serum exudes, and those of us who are accustomed to experimental

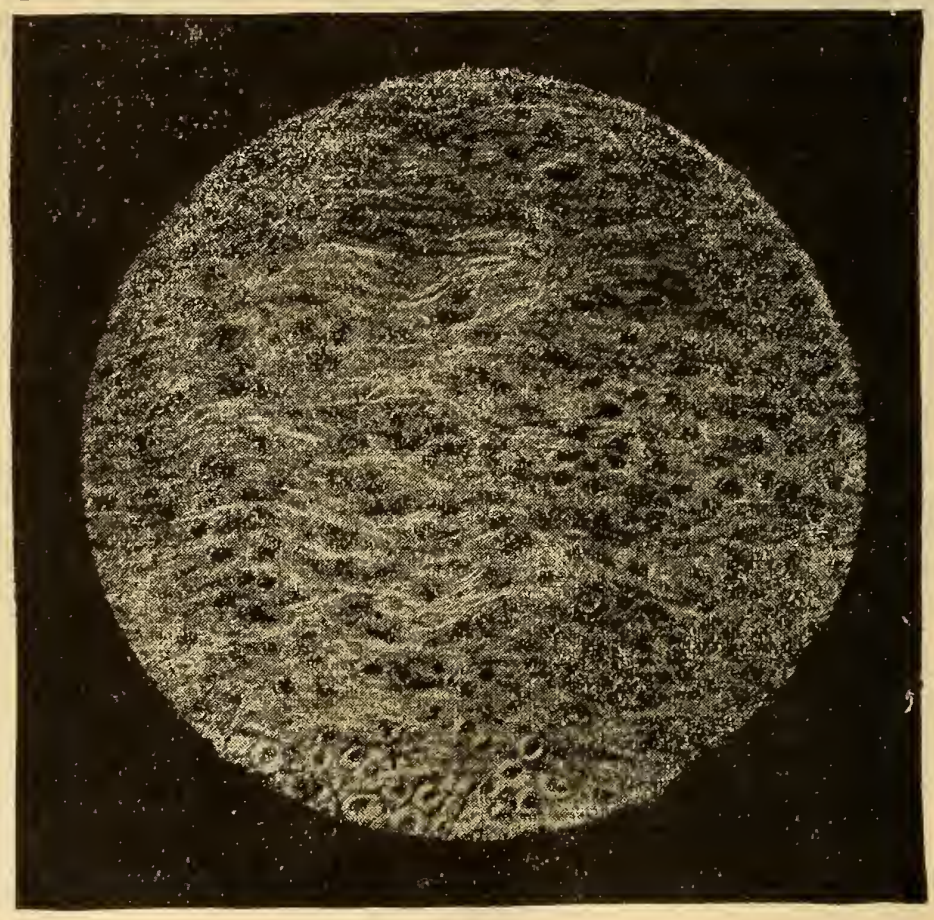


Figure 6.

Photo-micrograph of transverse section of infectious appendix of Dr. K. Mucosa, x 50. Intense round cell infiltration. No epithelium remaining.

abdominal work in the lower animals, realize that this is one of the most important points in the technique, and must never be neglected in cases like this one. The mucous tube is stripped away, leaving a trifling stump. Four Lembert sutures of cat gut

bury the stump. If the silk ligatures and its tiny stump must escape for any reason they would go into the lumen of the bowel. The relative position of sutures after this method of suturing, is shown in Figure 2.

The method of ligating which is apt to leave an Esquimaux window at the site of the appendix is illustrated in Figure 3, and I should have no confidence in such a scar.

In closing the wound of the abdominal wall, peritoneum and transversalis fascia and transversalis aponeurosis receive one tier of silk worm gut sutures. Internal oblique and external oblique aponeurosis each receive a separate tier of silk gut sutures, the knots to remain permanently, and skin and fat are honored with a cat gut tier. This patient now will not have a ventral hernia.

Let us examine the specimen removed. As I slit it along the free border you will observe that the inner tube hastily bulges out. It is what I call a "pop-corn" appendix, and on comparing it with the normal portion of this other appendix the reason for the name is apparent.

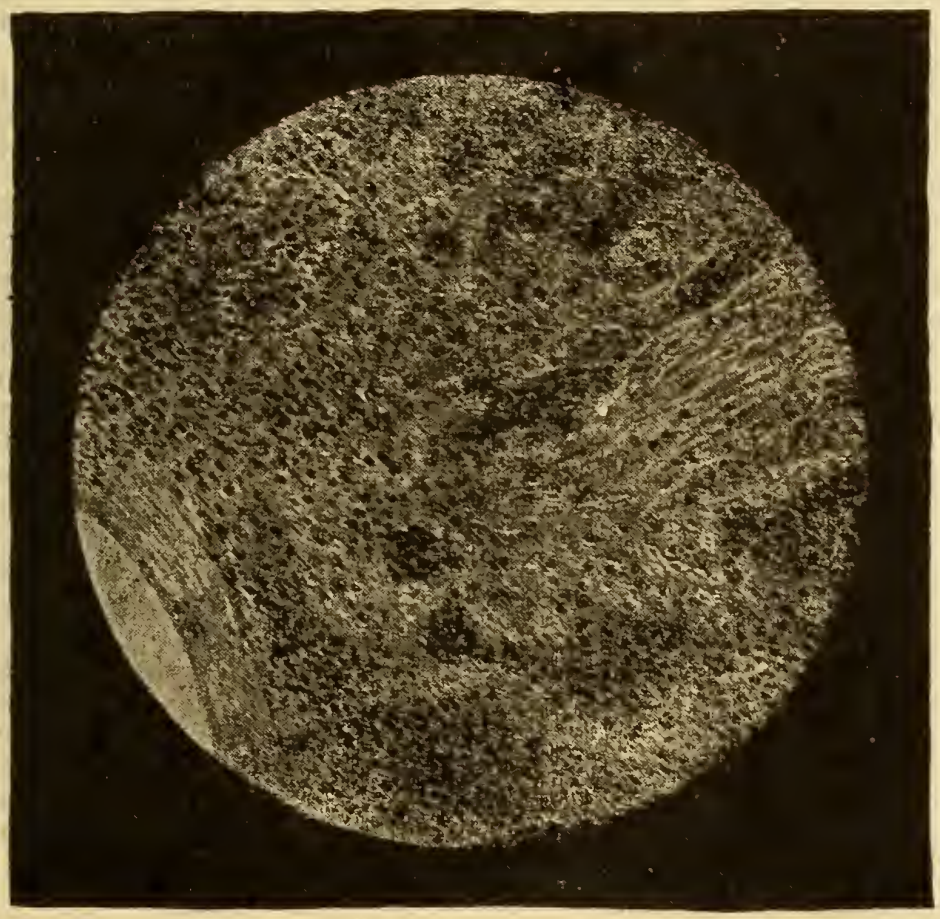


Figure 7.

Same case as Figure 6. Submucous and muscular coats infiltrated x. 250. Other secretions of this same specimen show that the subserous tissue and even the walls of the blood vessels were invaded and the lymphatics were clogged with products of this infectious exudative inflammation.

The condition shown in Figure 5, is, I think, characteristic of infectious appendicitis. This elastic inner tube apparently swells within the outer tight tube until the crowding cuts off circulation and then little or big sloughs of mucosa and adenoid tissue occur. These either decompose and escape into the bowel, leaving an ulcer; or they escape bodily through the wall of the appendix leaving a perforation. That I think is a pretty good history of appendicitis no matter whether the infection began through the influence of exposure, or foreign bodies, or local tuberculosis, or amœbæ coli, nematodes, or typhoid fever, or dysentery. So far as I can learn, authors have not noted the

fact that patients sometimes depreciate rapidly in health without discoverable cause for a week or for several weeks before the first acute symptoms of appendicitis appear. The natural explanation is that they are absorbing products of the infectious inflammation at the appendix before exudation has swollen the mucous tube enough to make strangulation. It is sometimes asked how can I reconcile this theory and the condition of dropsy of the appendix, in which all structures are widely distended. My answer is: Slow, low grade inflammation giving time for dilatation of all structures, and not associated with tonic muscular spasm of the muscular wall of the appendix, such as we would expect in acute catarrhal inflammation. The theory of causation of appendicitis carried out to meet the common principal symptoms, is arranged thus:

Colic.—Simple vomiting. Right inguinal tenderness, choking of swollen inner tube in tight muscular tube which is made more rigid by tonic muscular spasm.

Colic.—Bilious vomiting. Right inguinal tenderness. Formation of tiny or large inner tube sloughs, and absorption of septic products from the decomposing sloughs.

Colic.—Bilious vomiting. Right inguinal lump. Oozing through or slow perforation of appendix wall by sloughs and other contents, met by lymph exudate from peritoneum.

Colic.—Bilious vomiting. Collapse. Rapid perforation of appendix wall by sloughs and other contents, allowing no time for formation for protecting lymph exudate.

The reason why the inner tube is so hard pressed in the tight tube of peritoneum and muscle is because of the great round cell infiltration and serous distension. I will ask Dr. J. C. Smith to make a section of this infectious appendix in the pathological laboratory and then give us a photo-micrograph.

It seems strange to me that the life insurance companies pay so little attention to a disease which daily claims its large quota of deaths. Patients who have exacerbating appendicitis can at present take out heavy policies in anticipation of a fatal termination of the malady. The insurance companies will not always discover that a patient has appendicitis if the diagnosis which patients bring to the surgeon form any guide. I am keeping a record of diagnoses that were made for patients of mine who had typical appendicitis, and the list up to the present time includes bilious colic, bilious peritonitis, gall stones, typhoid fever, typhilitis, perityphilitis, cæcitis, la grippe, abscess of the abdominal wall, pyosalpinx, ovarian abscess, and psoas abscess.

I wish the physicians who make the diagnosis of typhilitis, perityphilitis and idiopathic peritonitis, could know how farcical such a diagnosis sounds to those of us who have frequent occasion to look and who find the case to be appendicitis.

This subject of appendicitis, Gentlemen, is very near to my heart. Friends of mine attacked in the prime of manhood are now gone forever, because their physician waited to see if they would not get better without operation. When they were a little worse consultants were called in, and the consultants gave cheer and hope to the anxious families by describing similar cases of theirs which had made most excellent recovery. Finally, when my friends were dead, the physician said: There! Those were the cases for early operation.

As to the after treatment of these cases I treat cases of appendicitis as I do surgical abdominal cases in general, strictly recumbent position upon the back for twenty-four hours or more. Hot water to quench the thirst, and practically nothing else for twenty-four hours. Sometimes, however, when there is much nausea and giddiness from either, it is well to quiet it with a dessertspoonful of effervescing bromo-soda in a half-glassful of cold water—not iced. At the end of twenty-four hours begin a diet with proteinol, three tablespoonfuls every three hours; then for twenty-four hours proteinol two tablespoonfuls every hour and milk four ounces every three hours, giving them separately. Watch the effect of the milk carefully. Should its casein curdle in masses causing pain and flatulence with irritation, we must not continue to use it raw.

After about 60 hours, should nothing untoward have happened, the patient may be put upon regular diet. Care of course being taken that cold cabbage, pickles, beets, cheese and fried foods be omitted. Even at the risk of being monotonous let us keep

them on plain soups, roast and broiled beef, mutton and chicken; eggs, boiled or in plain omeletts; vegetables to be sparingly used unless known to be of no harm, tomatoes, potatoes stewed, baked, hash-brown or *au gratin*, not fried or boiled, lima beans, asparagus, etc. Cabbage and cucumbers had better be eschewed. Milk and dry toast well done, but not carbonized. But little food should be taken at a time, but often, allow all the milk they want, should it agree. As to proteinol the more they take and the oftener they take it, the stronger they will be. Always give proteinol by itself, one, two or three tablespoonfuls at a time according to the patient's age and inclination. All pastries should be denied, puddings well made may be allowed as well as a fair amount of fruit, raw or cooked, so as to keep the bowels in good working order. Omitting all unripe and distinctly acid fruits that may occasion pain or diarrhœa.

If the patient has been in the habit of smoking and requests it after about a week, I allow it in moderation. The same as regards stimulants. If the bowels have not moved on the second day after the operation I advise an enema of soap suds one pint, glycerine one ounce, and olive oil one ounce, the whole to be well mixed and injected gently, retained as long as possible, then ejected into a bedpan. By no means must a patient try to get up or to help himself in these matters. From this on the bowels should move each day or every other day; should they not naturally move they should be made to move by internal medication. The mildest and gentlest methods must of course be used. It goes without saying the room is warm, comfortable and cheerful. The dressings are not to be moved as long as the patient has not disarranged them, or pain, fever, and discomfort generally does not call for it. In about 14 days they can be removed and the wound dressed, if pus is present ferret it out with Peroxide of Hydrogen (Marchand's), dust with aristol, cover with absorbent sublimated gauze, then a layer of absorbent cotton or wood wool, then either use adhesive strips or spica bandage to keep the dressing in place, the size and condition of the wound will determine you in this. It is best that patients should not sit up in the bed before the 17th day, then for a little while, more on the 18th, sitting up beside bed on the 19th, on the 20th a little walking around the room is allowed. On the 21st day patients are generally ready to leave the hospital.

Since the original article was presented for publication the author has completed a series of researches which prove that appendicitis is an infectious, exudative inflammation following entrance of bacteria into the mucosa and adenoid tissue. The inflammation once begun probably does not stop until slow erosion or rapid necrosis cause entire disappearance of the mucosa and adenoid tissue. Years may be required for the completion of the infectious process, and in the interval the patient is subjected to the danger of poisoning of peritoneum, or thrombosis of mesenteric vessels, of local cellulitis, and of various other septic complications.

PEROXIDE OF HYDROGEN IN THE TREATMENT OF GONORRHŒA.—WITH REPORT OF CASE.

By JOHN J. SULLIVAN, M. D., New York.

(Published by the *Medical Summary* for July, 1893.)

My recent experience with Peroxide of Hydrogen in the treatment of gonorrhœa has led me to believe that we have in this agent a most prompt and efficacious remedy. There is no doubt that Peroxide of Hydrogen thoroughly destroys the gonococci and promptly renders the urethral canal aseptic and free from pathogenic germs.

Acting upon the theory that antiseptics have the effect of maintaining any cavity or canal in the state of asepsis (without being deleterious to healthy tissues), which is the condition most favorable for the cure of suppuration, I have found by the use of this drug that the danger of an extension of the inflammation into the posterior urethra is lessened, the course of disease is decidedly shortened, and gonorrhœal complications avoided.

The following plan of treating acute gonorrhœa has proved very gratifying in my experience. I instructed the patient to use as an injection three times a day:

℞ Hydrogen Peroxide, Marchand's, (medicinal,) 1 oz.
Aquæ dist., 6 oz. Mix.

I present a brief history of two cases treated according to this method:

CASE 1.—M. S., a married man, aged forty-five years, came to me in great perturbation of mind, stating that he had recently contracted gonorrhœa from a prostitute. He had all the characteristic symptoms of acute gonorrhœa. I gave him the above preparation requesting him to use it three times a day, and told him to call again in the course of three days, which he did, when I found him completely cured.

CASE 2.—The second case was that of a young man (unmarried), twenty-four years of age, who came with gonorrhœa of six weeks' duration. He had tried a host of remedies prescribed by druggists for the trouble, but in vain. It had gone from bad to worse, and made him feel in a very dispondent frame of mind. An examination revealed the tissues of the penis to be in a very swollen and painful condition, with a profuse purulent discharge from the meatus, the lips of which were much inflamed and angry looking. He complained of great pain of urination, and was restless at night. I gave him the Peroxide of Hydrogen as above, directing him how to use it, and requested him to call again in the course of five or six days. When he presented himself five days later I found that the inflammatory process was subdued, the pain of urination had disappeared, and the patient expressed himself as feeling in every way comfortable. Ten days after this he had reported himself as entirely cured.

It will be understood, of course, that in these cases I have directed the patients to observe the usual rule for diet and internal treatment.

TREATMENT OF VAGINITIS BY PEROXIDE OF HYDROGEN. (MEDICINAL).

BY HERMAN L. COLLYER, M. D., NEW YORK.

(Published by the *Annals of Gynæcology and Pædiatry*, of Philadelphia, Pa., Sept. 1893.)

There is no disease, aside from the grave maladies so annoying and distressing to the patient as vaginitis. The married and single alike may be attacked by it in one or another of its varieties, and its treatment by routine methods is slow and unreliable.

In all its forms, vaginitis starts as do other inflammations, with heat, pain, redness and dryness of the parts. The condition is soon followed by slight swelling of the labia, and by a discharge which becomes muco-purulent. Medical advice is usually sought after this stage has become established. It was an old-time custom, and is to-day observed by some, to order douches, with different mucilaginous substances, and to make local applications, many of which have wrought harm. The patient was dosed meanwhile with various drugs supposed to have a specific effect on the inflamed parts, regardless of the causes of this disease.

Dr. Egbert H. Grandin, of this city, called my attention some time ago to the valuable properties of Peroxide of Hydrogen, (medicinal) Marchand's, in cases of vaginitis. I then began its use in this disease, whether specific, simple or senile, and have been able to cure my cases in a more speedy and effective manner than by other methods.

It is my custom in the treatment of a case of vaginitis (purulent) first to wash the parts with warm creoline water (3 ss to Oj), getting rid of all the secretions possible; then through a glass or rubber cylindrical speculum to thoroughly wash out the vagina. I use peroxide of hydrogen (medicinal) plentifully, either full strength or diluted with lukewarm water, and rub the surface with a pledget of cotton, withdrawing the speculum at the same time (but not allowing it to come out), so as to allow the peroxide to get deep

into the crypts, destroying the pyogenic membrane and the gonococci, if any have imbedded themselves into the epithelium; I treat the vagina throughout in this manner, and also the vulva, especially in the folds of the labia and the orifices of the Bartholin ducts. Having destroyed every vestige of the pus with the Peroxide of Hydrogen, I pour into the speculum about one ounce of sol. argenti nitratis (℥ ss to ℥ i) and coat the denuded membrane throughout, inserting a strip of iodoform or aristol gauze to keep the parts separated, swabbing the external parts with the same solution (gr. xv to ℥ i).

I repeat this process every second or fourth day, as the case demands. The patient is instructed to remove the gauze on the following day, and to use in acute attacks, a cool, weak solution of the lotion plumbii et opii or muriate of ammonia sol. (℥ ii to Oi) water, two or three times daily. When the symptoms become milder, the use of astringents is necessary, as sodii biborat, sulpho-carbolate of zinc or alum.

In specific vaginitis the endometrium and the urethra have often become affected. I treat those cavities in the same manner, of course observing the precautions necessary for each, in all cases securing free drainage.

ETIOLOGY OF THE VARIOUS DEFORMITIES OF HIP-JOINT DISEASE.

By A. M. PHELPS, M, D., New York.

Professor of Orthopedic Surgery in the University of New York and the New York Post-Graduate School and Hospital; Professor of Surgery in the University of Vermont; Surgeon to the City Hospital; President of the American Orthopedic Association.

Read before the American Orthopedic Association, September, 1892.

(Published by the *New England Medical Monthly*, January, 1894.)

We are all familiar with the deformities which occur in the first, second and third stages of hip-joint disease. The typical deformities are: In the first, abduction, slight flexion, and outward rotation, with apparent legthening (see Fig. 1); in the second, an exaggeration of the deformity which occurs in the first (see Fig. 2); while in the third stage the entire picture changes to that of flexion, abduction, inward rotation; and real shortening, with the toe resting upon the opposite instep (see Fig 3). In a considerable per cent. of cases erratic deformities are observed; such as extreme flexion with outward rotation and shortening of the affected limb, the deformities of the second stage occurring in the third. Abduction and shortening, without flexion, is sometimes seen.

This division into stages is made merely for clinical convenience, and relates only to semeiology.

Barwell says that we may conclude that the appearances indicate certain processes of disease, but with morbid anatomy the divison into stages has no direct connection. I have adopted this classification of the deformities in my observations and in writing.

A limb *with shortening, from destruction of bone*, I classify as belonging to the *third stage, without regarding the deformities present.* A limb with abduction, flexion, and inward rotation, I classify as disease in the third stage; even though there be no shortening, *I have observed in cases excised, that these deformities of the three stages as already described, follow very closely, and quite accurately interpret, certain pathological changes taking place in, or about, the joint.*

The question under consideration is, what causes these various deformities?

1. Why does the limb assume, nearly always, the position of abduction, flexion, and outward rotation without fixation, in the first and second stages, and abduction, flexion, and inward rotation in the third stage? (See Figs. 1, 2 and 3.)

2. Why, in certain percentage of cases, do the deformities of the second stage occur in the third, *i. e.*, flexion, abduction, and outward rotation?

Barwell makes no attempt to explain these phenomena. I quote from this book:*

"While the muscles thus waste, the joint assumes a fixed position, natural to itself, abnormal only in its persistency toward the side of the flexion. This is the case at the elbow, wrist, and ankle, while at the shoulder abduction pertains; at the knee an inward twist of the tibia is usually combined with considerable flexion; at the hip very complicated positions, to be studied in a futute chapter, are assumed. These postures assume in nearly

Fig. 1.

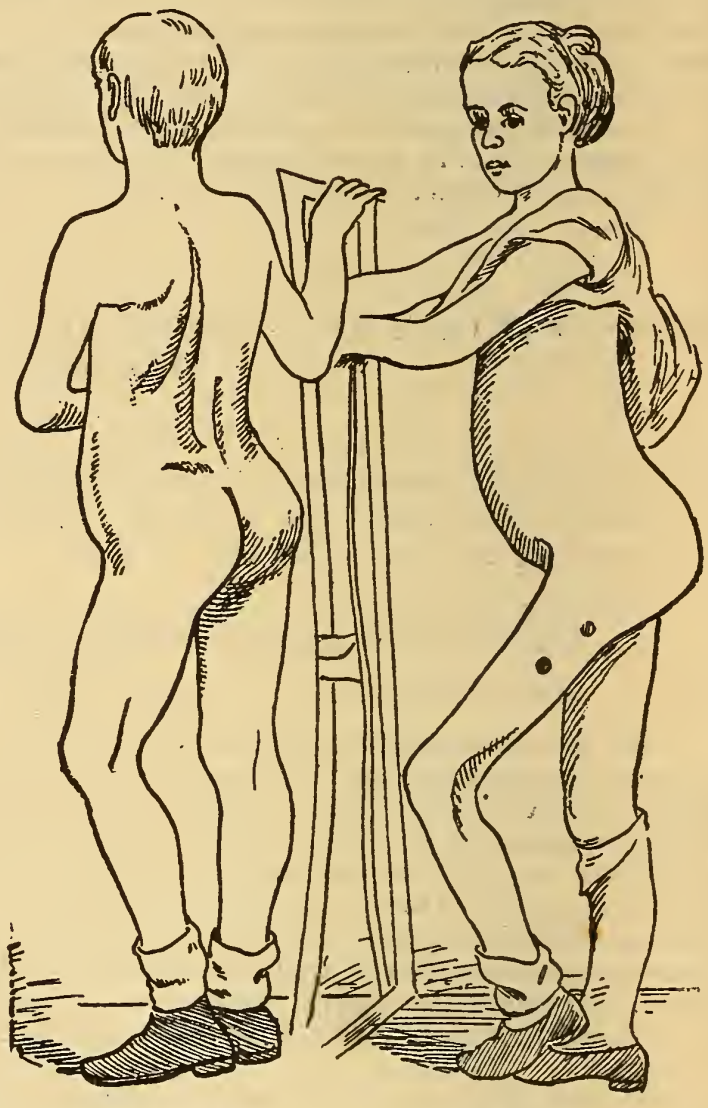


Fig. 2.

Fig. 3.

every case of joint disease, almost with the certainty of an unchangeable law. There is then, in all joint diseases, a tendency of the flexor muscles to contract, while the extensors, if not in absolute relaxation, do not, at all events, retract such action."

"It is true that the flexors are probably, in the limbs, stronger than the extensors, but in fact a mere examination will show that on the flexor side muscles are rigid and on the opposite side flaccid. Our knowledge is as yet insufficient to account for the phenomenon."

We will consider these statements later. The experiments of the Germans and of Edwin Owen, of London, England, demonstrated that the joint, when forcibly injected

* Barwell, p. 106. Wood's Library, 1881.

from within the pelvis, produced eversion, flexion, and abduction of the limb and immobilization of the joint.

Sayre concludes from these experiments, that effusions are always present in joints diseased, that the intra-capsular hydraulic pressure is the cause of the deformity in the first and second stages of hip disease.

He says (his book p. 248): "The peculiar position of the limb gives to the second stage of the disease the name 'apparent lengthening,' but I prefer to designate it as the stage of effusion."

And he accounts for the deformity of the third stage, viz., flexion, adduction, and inward rotation, by the rupture of the capsule and the escape of the fluid, thus relieving

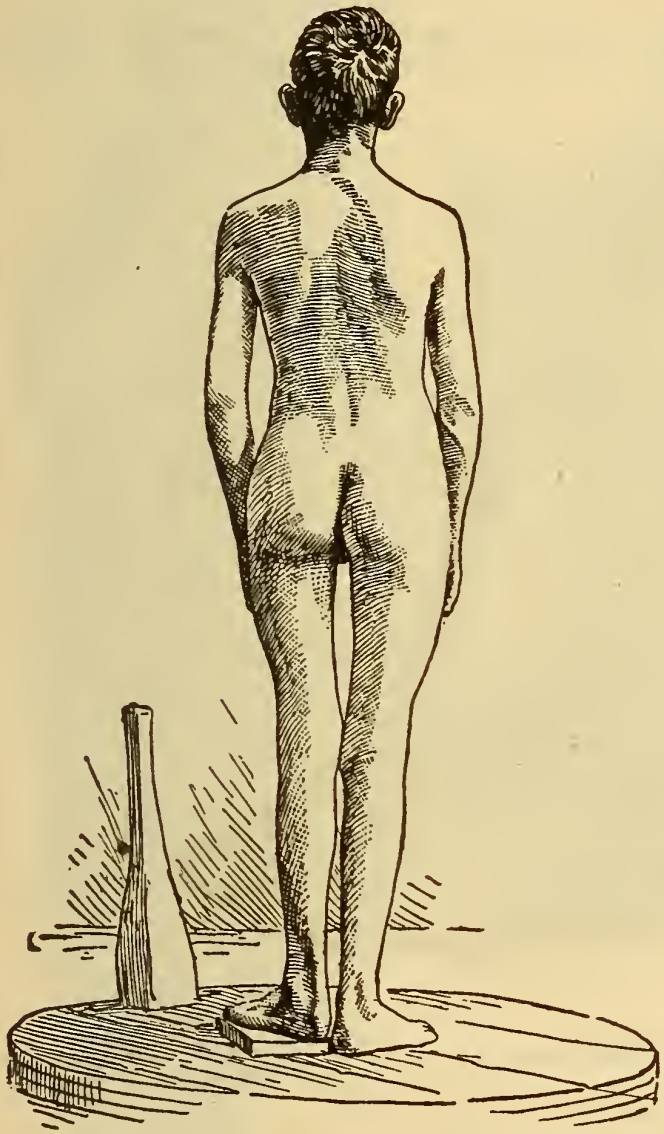


Fig. 4.

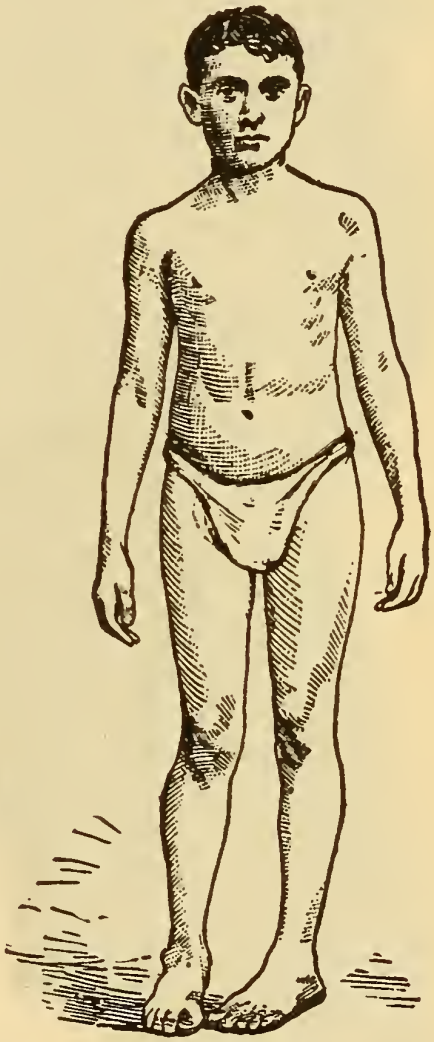


Fig. 5.

intra-articular pressure. This he claims, allows the legs to swing to the deformity of the third stage. He says (p. 259):

"And rupture of the capsule takes place and the imprisoned fluid escapes into the surrounding tissues. When this has occurred the disease is in the third stage.

"The limb is now adducted, inverted, and flexed.

"The change in position is due to the fact that the fluid in the joint cavity has been evacuated.

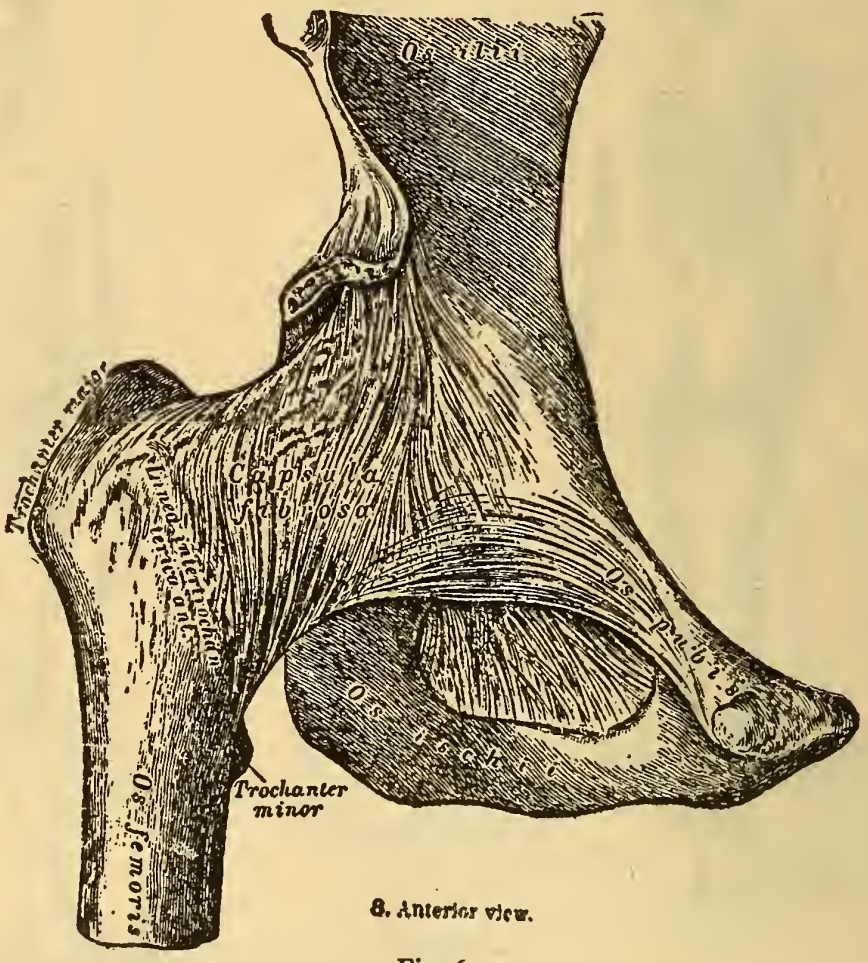
"The distension of the capsules, which was the mechanical cause of the flexion and adduction of the limb, having been relieved, nothing now obstructs the free action of the adductors, and the limb is therefore adducted and inverted."

So far as I know, this hypothesis of the Germans, approved and indorsed by Dr. Sayre, is the only explanation we now have of the etiology of the various deformities of the hip-joint disease. Barwell offers none; but makes among others, a broad statement that, "It is true that flexors are probably, in all limbs, stronger than extensors."

A moment of thought will convince us that this last statement is certainly an error.

In the knee-joint the quadriceps is much stronger than the flexors. This we have demonstrated in the course of our experimental work, and it will be published shortly. The same is also true of the hip-joint. The fluid hypothesis is certainly erroneous, for the following reasons:

1. A very large per cent. of cases of morbus coxarius are unattended by fluid effusions. *Still, the same picture of deformity is seen as in those cases attended by large effusions.*



8. Anterior view.

Fig. 6.

2. I have observed in our clinics and have operated upon cases of *extra-capsular disease, in which the joint was not diseased but the same picture of deformity presented itself.*

Barwell says (p. 292) "While inflammation, or even suppuration about the epiphysis of the femur arises, certain pains, forms of lameness, etc., are produced, while as yet there is no effusion or suppuration within the joint cavity; no morbid change of the parts which form its walls. We have, namely, so-called symptoms of morbus coxarius, while as yet in the hip (joint) there is no disease."

3. Cases of suppurating joints with large effusions, often take the erratic deformities of the third stage—*i. e.*, abduction, flexion, and outward rotation—even after the joint contents have discharged.

4. There can be no reason why, after the evacuation of the joint, the limb should not return to the deformity of the second stage instead of the third; because the three

Fig 7.

Fig. 8.

great glutei and outward rotators are stronger than the abductor group, unless the limb is flexed beyond twenty degrees. These are the chief, and I believe, valid reasons why the explanation of these deformities by the fluid hypothesis is incorrect.

I have become fully convinced that as yet a correct explanation has not been offered for these deformities.

After concluding several dissections of the hip-joint, I desire to place before you for your consideration and criticism the theories and hypothesis upon which we worked, and the conclusions at which we arrived.

It became necessary before any experimental work was performed, to carefully compile clinical data in a large number of cases. Assisted by Dr. Plymptom and Greenway, these observations were made at our clinics at the University Medical College, and also at our Out-Door Department and the Orthopedic Ward of the New York Post-Graduate School and Hospital, two places which afforded us ample opportunities for observation. The conclusions reached were:

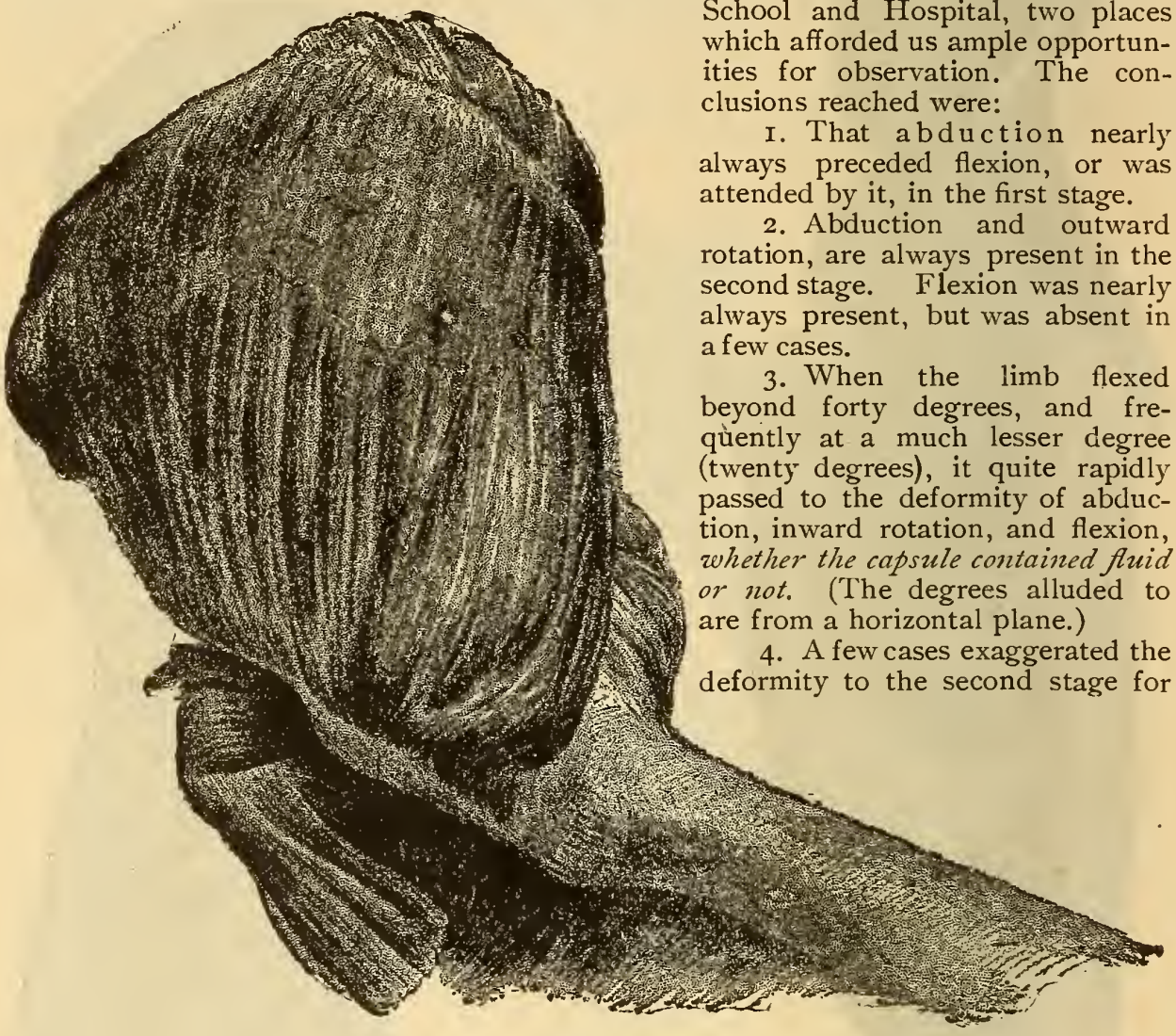


Fig. 9.

1. That abduction nearly always preceded flexion, or was attended by it, in the first stage.

2. Abduction and outward rotation, are always present in the second stage. Flexion was nearly always present, but was absent in a few cases.

3. When the limb flexed beyond forty degrees, and frequently at a much lesser degree (twenty degrees), it quite rapidly passed to the deformity of abduction, inward rotation, and flexion, *whether the capsule contained fluid or not.* (The degrees alluded to are from a horizontal plane.)

4. A few cases exaggerated the deformity to the second stage for the third. In other cases there was outward rotation, abduction, shortening, with but slight flexion in the third stage. (See Fig. 4.)

In another case observed by Dr. Plymptom, abduction and inward rotation, without flexion, occurred with three-fourths of an inch shortening. (See Fig. 5.)

5. That there was always spasm and contraction of muscles about the joint, and *in nearly every case all the various groups were in a state of spasmodic contraction.* That shortening annulled or modified the action of the abductor group.

These observations, together with dissections which Dr. Greenway and I made, presented numerous problems which will be considered later. At the University dissecting-room, we made a series of dissections, from which I think a fair explanation can be given of every deformity which may occur in any case of hip disease.

The hip-joint is surrounded on its outer aspect by a mass of muscles running diagonally from the pelvis to the great trochanter from all directions. When the limb is in a straight position the combined action of these muscles produces abduction of the limb. The capsule is wound around the neck of the bone. The tension of this capsule, together with that of the Y-ligament, holds the head of the bone firmly in the socket and produces great pressure upon the joint when the limb is in the straight position. (See Fig. 6. Straight position.)

Fig. 10.

The great abductor group of muscles pass diagonally downward from the pelvis and are inserted into the shaft at the femur posteriorly along the linea aspera. (See Fig. 7.)

The flexor group arises from within the pelvis, passes downward over the pubes, taking a reinforcement which arises from the anterior surface of the capsule of the joint, and is inserted into the lesser trochanter. This group acts over the pubes as a cord over a pully, *and its power increases as the leg flexes*. This flexor group is antagonized by the inferior portion of the glutæus maximus.

The external rotators are antagonized by the tensor vaginæ femoris and a portion of the glutæus minimus and medius. Thus we have the several groups in their respective order when the limb is in the straight position, viz.:

Glutei group, abductors, antagonizing adductor group.

Flexor group, antagonizing extensor group.

External rotator group, antagonizing internal rotator group.

To determine the relative strength of each group the muscles were weighed separately, and the triangle in which they operated measured, as also was the length of lever upon which they operated. The glutæus maximus muscle, which weighed two and one-half pounds, acting in a triangle formed by a line drawn from its insertion near the great trochanter to the centre of the head of the bone, three inches; from the head of the bone to the origin of the muscles, six inches; from its origin to its insertion, six inches, was assumed to be capable of lifting fifty pounds one inch. This was taken as the unit of strength. Other triangular muscles of different weights, operating in dissimilar triangles, could be accurately estimated as to their comparative strength. The rule which I followed was that laid down by Haughton (see "Haughton's Principles of Animal Mechanics," p. 183), from which I quote:

"The work done by the same (a triangular) muscle will be proportional to double the perpendicular, let fall upon the side of a triangle from the foot of the bisector of the vertical angle." The quality of the muscular fibres of each group very closely cor-

respond. In each group are found fine or coarse muscular fibre in about the same proportion. The rule applied to ascertain the relative strength of the great adductor and abductor group gives to the adductor group a decided advantage, because they stand paralel with the plane of the triangle, whereas the glutei muscles do not, but were so measured and estimated. In spite of this advantage given in the estimates the abductor group acting on the shorter lever was found to be much stronger than the adductors, the proportion *being one hundred and thirty-one pounds to the abductors, to one hundred and sixteen pounds to the adductors in the subject examined.* Then, when all the muscles are affected by spasm equally and the limbs parallel, the abductors would produce abduction because of their superior strength.

Fig. 11.

From our clinical observations *I at once concluded* that the reason why the limb went over to the deformity of the third stage of the hip-joint disease *was because the action of these muscles were all changed by the flexion of the limb, or from pathological destruction of the joint changing or annulling the action of the muscles by destroying the leverage, or localized irritation of nerve-plates in the area of disease, producing spasms of groups of muscles receiving nerve-supply from the same common tract.*

The question of nerve destruction within the joints quite surely plays an important part in determining deformities occurring in circumscribed foci of disease. But after the entire joint becomes involved, the element must be left out of the question only so far as general spasm is produced in all muscles about the joint. I quote from a letter of Dr. Towle, Professor of Anatomy in the University of Virginia, which seems to demonstrate that the nerve-supply comes from different trunks.

"As to nervous supply of hip, what I have seen is as follows: The obturator immediately on emerging through the obturator foramen gives off a branch which pierces the capsule; the sacral plexus or the upper part of great sciatic, gives off two small branches which enter the back of the capsule, the nerve to obturator internus, from sacral plexus, leaving through great

sacro-sciatic foramen, gives a branch to back of capsule. What particular structure of joint is supplied by each I cannot say, as I have only traced it to capsular ligament.

When the limb becomes flexed, the abductors begin immediately to lose their power as abductors, and in proportion to flexion become inward rotators.

Figs. 8 and 9, taken from the dissections, represent the glutæus medius, with the limb in a straight position, and then flexed to thirty-five degrees. *In Figure 8 the muscle acts as an abductor, while in Figure 9 its action is changed to that of an internal rotator when the limb is flexed to thirty-five degrees.*

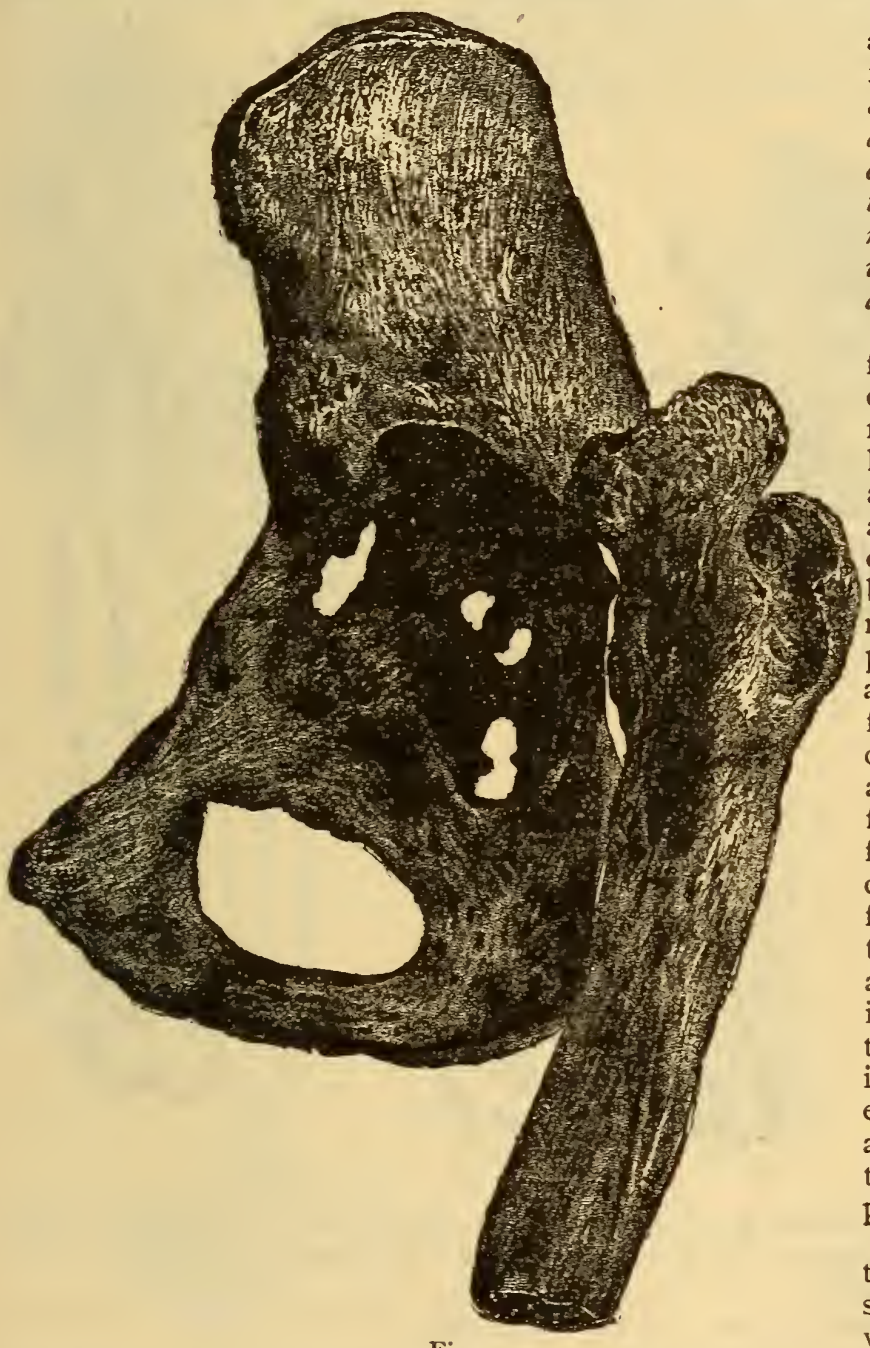


Fig. 12.

Figs. 10 and 11 are from photographs of our dissections of the glutæus minimus. In Fig. 10, the limb straight, the muscle acts as an abductor; whereas the limb being flexed only fifteen degrees, it becomes a powerful internal rotator and increases in power as the limb flexes, as does the tensor vaginæ femoris (see Fig. 11): the outward rotators become abductors when the limb is flexed to an angle of about forty degrees, with the exception of the quadratus femoris and obturator externus. The change of action in the other muscles is quite as marked as in these which have been illustrated and presented as examples. (See Figs. 10 and 11.) This brings us to a consideration of the problem before us.

Question 1. Why in the first stage is the limb slightly abducted, outwardly rotated, and flexed with apparent lengthening?

Answer. Because of a voluntary effort on the part of the patient to relieve tensions of the capsule and Y-ligament. (See Fig. 6.)

Question 2. Why does this deformity increase, constituting the second stage of the disease?

Answer. Spasm of the muscles about the hip-joint is present. The great glutei, outward rotators, tensor vaginæ femoris, and flexors acting together have the advantage

of leverage and strength (being irritated and affected by spasm, and aided by a voluntary effort, or non-resisting effort of the patient, the same as in the first stage) the limb still exaggerates the deformity of the first stage.

Question 3. As a rule, with an occasional exception, why do limbs assume the deformity of the third stage only after flexion to twenty-five degrees has taken place?

Answer. Because after the limb passed to twenty-five degrees of flexion, the abductors to a very great extent *become internal rotators* (see Figs. 8, 9, 10, 11); the *external rotators almost totally lose their power as external rotators* (see Fig. 11), *and become abductors*, with the exception of the quadratus femoris and obturator externus, and the tensor vaginæ femoris becomes a powerful inward rotator. Resistance or antagonism to the powerful abductors and flexors of the thigh being modified or annulled by flexion, the limb must pass to the deformity of the third stage, namely, abduction, flexion, and inward rotation.

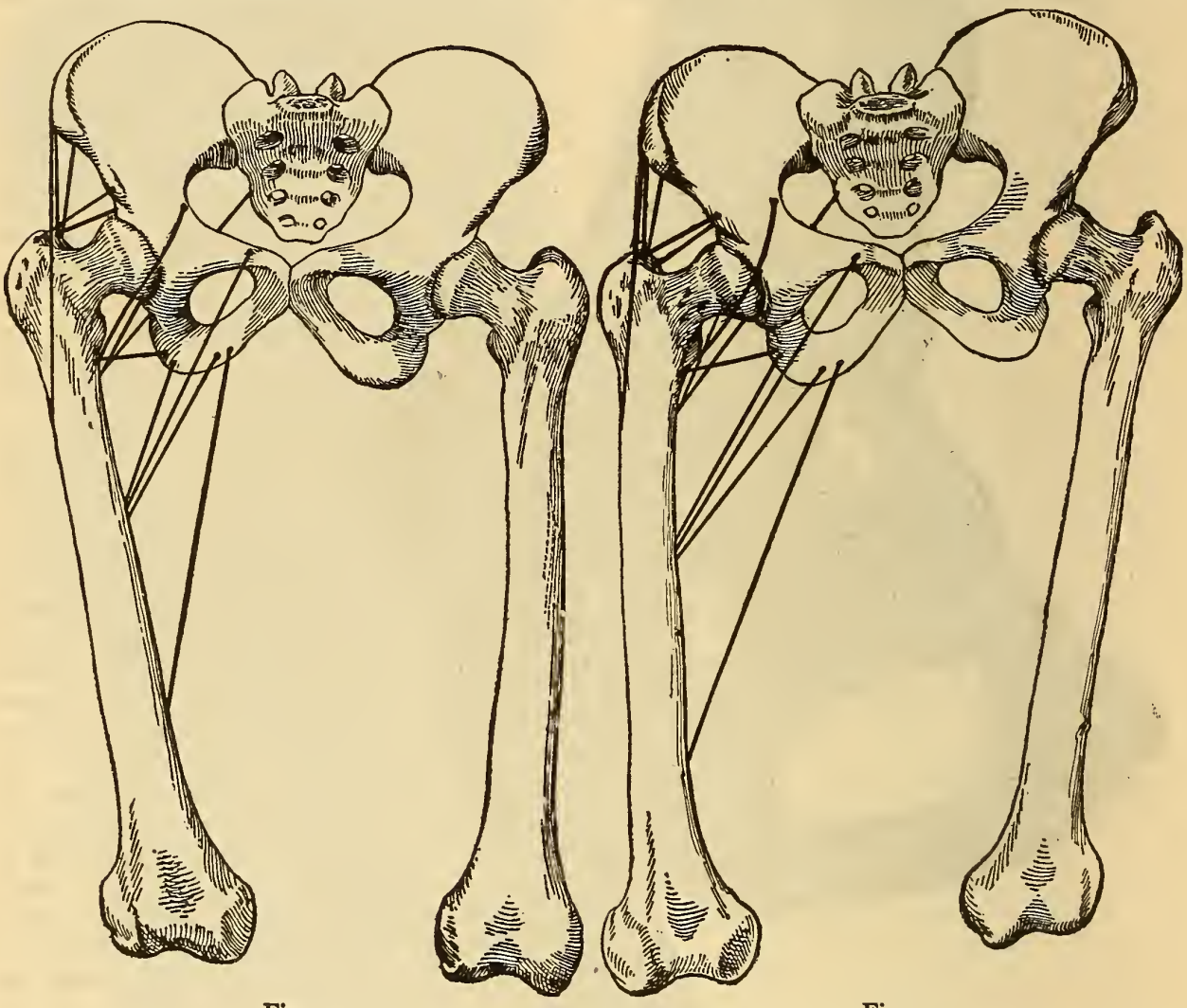


Fig. 13. Fig. 14.

Question 4. Why do some cases in the third stage of the disease continue the deformity of the second?

Answer. These may be, and usually are, cases characterized by great abduction and outward rotation from the commencement of the disease, or soon after. Many of these erratic deformities occur in bed cases from positions of case assumed while lying. In others the head of the bone is thrust forward against the anterior and upper border of the acetabulum, cutting it away producing a partial dislocation forward. This extreme abduction puts the abductors on the stretch and partially paralyzes them by

tension. The abductors and outward rotators become permanently contractured, adhesions form, and the limb is held in this extreme position of deformity of the second stage in the third.

I have excised two cases of this deformity, and in both cases the head of the bone had peforated the acetabulum anteriorly and superiorly, and the bone was held firmly against the pelvis by bands of adhesions.

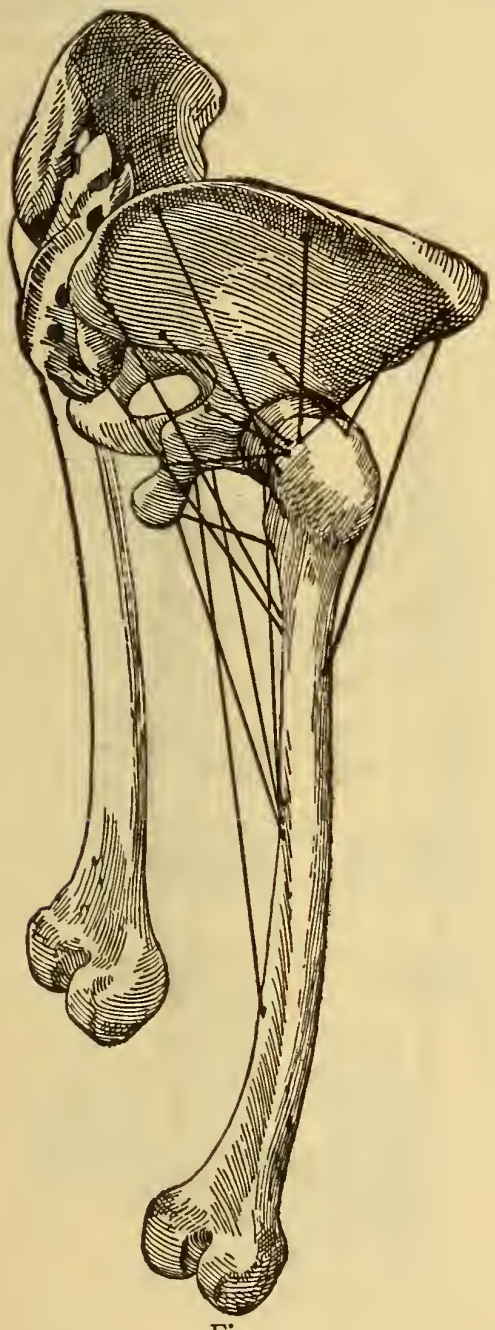


Fig. 15.

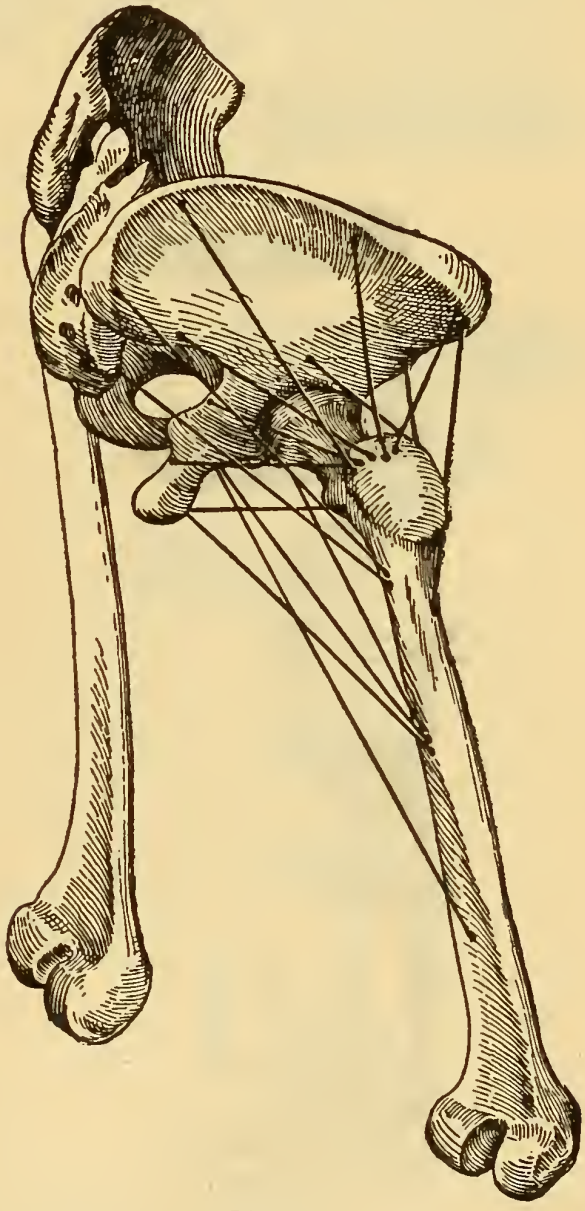


Fig. 16.

Fig. 12 is taken from a photograph of a case where the head of the bone had cut away the acetabulum anteriorly and superiorly, and was about to escape through the openings forming in the acetabulum into the pelvic cavity.

Dislocations may take place anteriorly and posteriorly; posteriorly, often from large effusions or other pathological cause; but anteriorly from destruction of the anterior border of the acetabulum, due to the action of the external rotators and glutei muscles and

destruction of bone from disease. *The shortening of the neck of the femur destroys the action of the flexors and the abductors by changing the leverage.*

Question 5. Why did one of the cases have abduction, outward rotation, and shortening without flexion? (See Fig. 4.)

Answer. Because of the destruction of the head and neck of the femur, or the passing of the head through the acetabulum *anteriorly.* This destroyed the leverage of the glutei and flexors, which gave the abductor full power to abduct while the external rotators still acted. The same cause explains the deformity in Fig. 5, only the head took a *backward* course owing to *destruction of bone in that part of the acetabulum.*

Nerve distribution within the joint undoubtedly plays an important part in producing special actions of groups of muscles, depending on the location of the lesion. As for

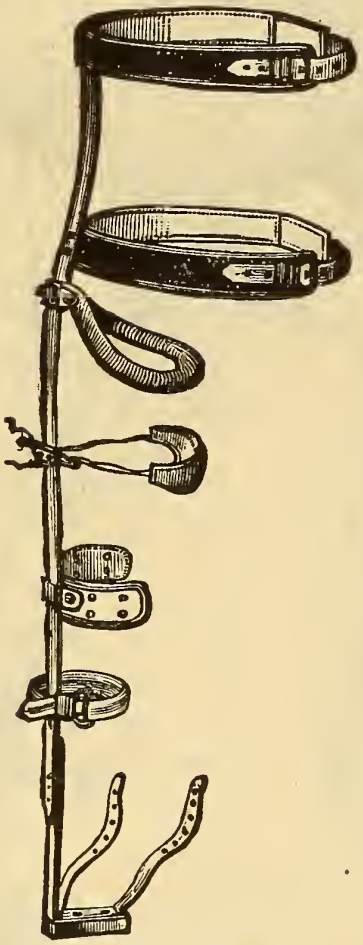


Fig. 17.—The Cheap Dispensary Splint.

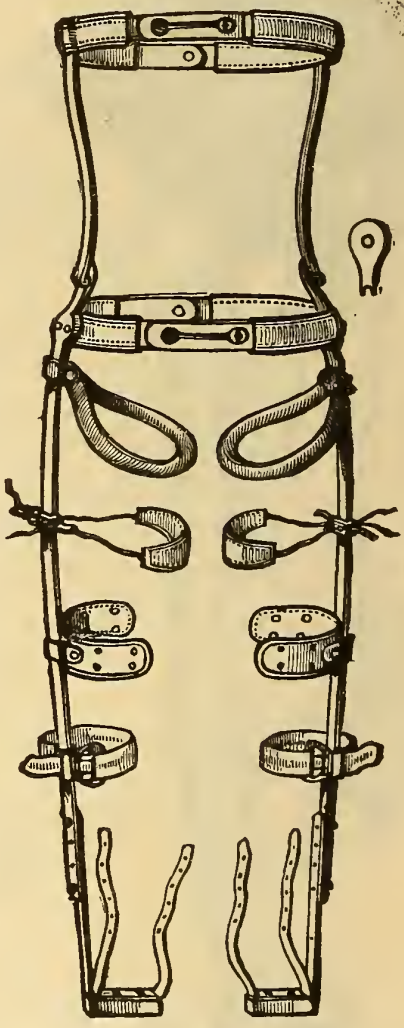


Fig. 18.—The Double Dispensary Splint.

example, in the knee-joint flexion is never seen in disease of the patella alone. This is due to the fact that this portion of the hip-joint is supplied from the anterior crural and obdurator nerves, which trunks supply the extensors of the limb, and not the flexors. Whereas flexion occurs in disease of the condyles, the nerve supply of which is derived from the great sciatic, which nerve-trunk supplies the chief flexors and not the extensors of the limb.

To furthur illustrate the action of the muscles about the hip-joint, the limb being

straight and then flexed, I present this manikin, with rubber straps so placed as to represent the action of the various groups of muscles. Fig. 13 should represent the limb parallel, but the artist failed to place them so. Abduct the limb, as seen in Fig. 14, and the pelvis tilts and the right limb appears too long. This relieves the pressure within the joint by unwinding the capsule (see Fig. 6), and puts the abductors on the stretch, enfeebling their action until flexion commences or the head and neck are destroyed by disease. The abductor group being stronger, holds the limb in position, (See Fig. 15,

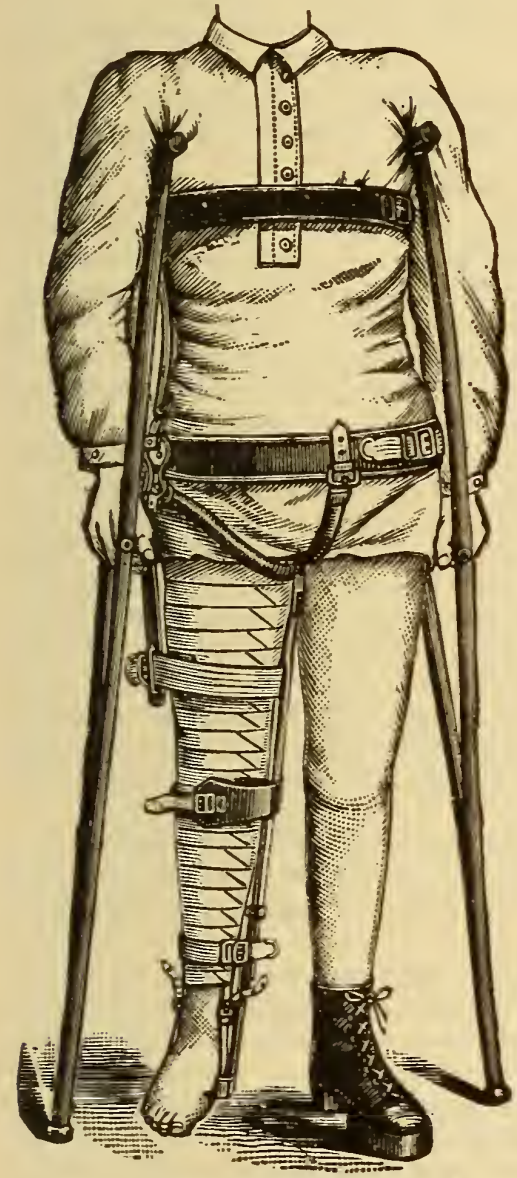


Fig. 19.—The Patent Splint Adjustive High Shoe, and Crutch.

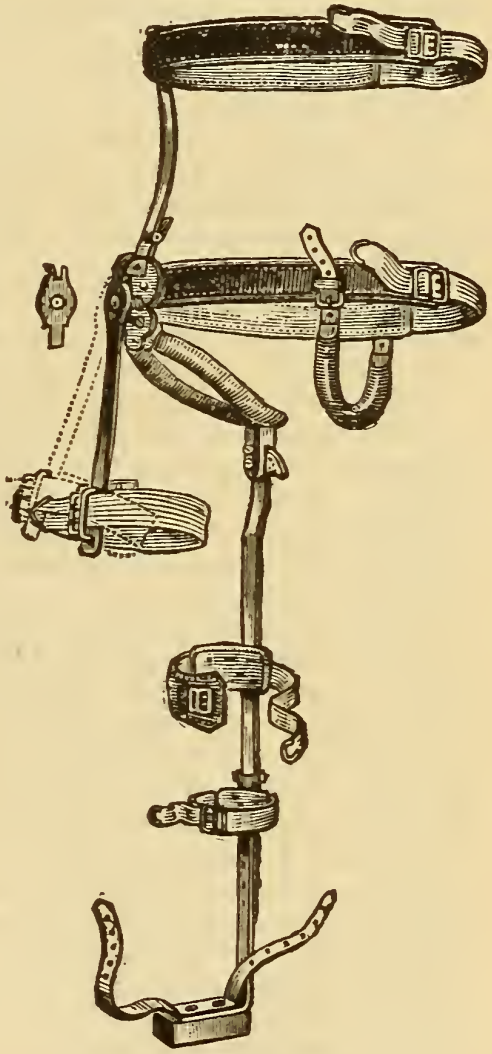


Fig. 20.—Inside Bar and Lateral Traction-lever.

side view, limbs parallel.) Then as flexion commences the action of every muscle is changed or modified (see Fig, 16), and the limb must assume the position of the third stage of hip-joint disease, viz., flexion, abduction, inward rotation.

Conclusions.—Normal or typical deformities are produced by change of leverage and action of muscles due to—1. A voluntary effort. 2. Involuntary spasm or contraction of muscles. 3. Nervous irritation of groups of muscles due to location of lesion in or about the joint.

The erratic deformities are produced by change of leverage, due—1. To patho-

logical causes, *e. g.*, destruction of bone, head, neck, or acetabulum. 2. Nervous irritation of groups of muscles, due to location of disease in and about the joint.

The pathological causes of erratic deformities are—1. Shortening of the head and neck of the femur. 2. Perforation of the acetabulum. 3. Shortening of the limb from either of the last named causes. 4. Burrowing of pus through groups of muscles, either irritating them to contraction or destroying them. 5. Dislocations from destruction of bone. 6. Dislocations from large effusions. 7. Cicatricial contraction binding down and restricting the limit of motion of the femur.

The explanation of the cause of the deformities existing in hip-joint disease is appliable to every joint in the body, and very soon I will publish the result of experiments on all the other joints.

I have for the sake of brevity omitted the mathematical work, and also the results of the study of the action of flexor and extensor groups, for to my mind they play altogether a secondary part in the drama.

The reader at once asks the question, "Why all this work? what good can come of it?" I will briefly answer: In the treatment of hip-joint disease fixation to prevent motion, and extension, to overcome intra-articular pressure, is the law of treatment.

We have observed that these great and powerful groups of muscles act upon the thigh with so much force as to produce great deformities. That the patient voluntarily assume certain positions to relieve the tension of the capsular ligament *whether there is effusion or not. That these groups of muscles do not act on an axis with the shaft, but nearly on a line parallel with the axis of the neck of the femur.* From these facts we must decide that to relieve intra-articular pressure by overcoming the contraction of the muscles *traction should be made in the line of the axis of the neck and not of the shaft.*

Patients with deformity should be put to bed with two lines of extension one in a line with the axis of the shaft and deformity, and the other at right angles to the shaft. If abscesses are present they are always incised and washed out with bichloride of mercury, solution 1 to 1000, then thoroughly disinfected with Marchand's Peroxide of Hydrogen ($H_2 O_2$ medicinal), then the joint and abscess cavity filled with iodoform and glycerine, one-half to four ounces, and finally packed with gauze, dead bone is removed to any extent up to complete excision if necessary. Then when the deformity is overcome I place them on a lateral traction fixation splint, which I devised with a high shoe on the well limb, and a pair of crutches, and allow them to take plenty of out-door exercise. A glance at the cuts will convey the idea.

The thoracic portion is necessary to fix the joint. *It is argued that the patient cannot sit down. This is incorrect.* The patient sits on the *side of a high chair and the leg and splint fall to the side the same as any other hip splint.* Sayre says the patient's leg must stick out and be in the way.

So must it when his hip or knee-splint is adjusted. He also, says anchylosis must result from this fixation, that motion is necessary to prevent the accident. *I have not observed bony anchylosis nor angular deformity in over two hundred cases, many of whom have been fixed from one to four years without motion.*

Sayre's knee-splint fixes the knee by extending from below to above the knee without a joint. If fixation is good for a diseased knee, why is it not good for a diseased hip? Is there any difference in the treatment of the same disease, whether in the hip or in the knee? Should we have a plan of fixation for the knee and motion for the hip?

Shaffer's statistics *show anchylosis in about sixty per cent. of his cases reported. He uses the long traction splint, essentially the same splint used by Sayre, Taylor, and others —one that permits of free motion at the hip-joint. The patient is allowed to walk upon the splint, and nearly every case recovers with angular deformity. This is wholly unnecessary. No case need recover with bony anchylosis or angular deformity.*

I do not pretend to have solved all the problems of the causes of the deformities occurring in morbus coxarius; but I offer this paper as a preliminary one to further study of this most complicated joint in a condition of disease.

These splints are made by Ford of New York.

THE ETIOLOGY, DIAGNOSIS AND TREATMENT OF ULCERATION OF THE RECTUM.

By JOSEPH M. MATHEWS, M. D., Louisville, Ky.

Read before the Mississippi Valley Medical Association, at Indianapolis, Oct. 5, 1893.

(Published by the *New England Medical Monthly*, January, 1894.)

The time allowed to reading papers before the society is too limited to permit of an exhaustive review of my subject.

I will therefore only deal with it in a general way. For a matter of convenience I will classify these ulcers under four heads, viz.: benign, malignant, tubercular and specific. To this division there might be a valid objection based upon correct pathological grounds. As for instance: In this classification I make the term malignant, synonymous with cancer, and yet the tubercular ulcer may in truth be malignant, without assuming the characteristics of cancer. Again, some writers would have us believe that the tuberculous patient was closely akin at last to the syphilitic one, or vice-versa, and thirdly, there is a well grounded belief with pathologists that innocent or simple ulceration may at any time take on proportions of malignancy. These subjects would take more time than is given me, to discuss them to-day. Therefore to begin in the order named I would say that benign ulceration is not so frequently found in the rectum as is supposed. Indeed whenever I meet with a well defined ulceration existing in the rectum I immediately begin to suspect some special diathesis. One would think that from the office of the rectum it was particularly liable to become ulcerated. But if we study the part anatomically it will be seen that nature has provided it well for the purpose it serves. For instance its mucous membrane is much thicker than any other portion of the intestinal tract, and therefore more able to resist irritation. The pouch of the rectum is very capacious and sufficiently able to accommodate the supply. It is only when the physiology of defecation is interfered with that any danger is to be feared. The lumen of this portion of the gut is not narrowed by any ordinary causes. For these and other reasons I have long since been forced to believe that such ascribed causes as pregnancy, dysentery, etc., were not great factors in producing ulceration of the rectum.

Malignant Ulceration.—The rectum is a favored seat for cancer. Many times the disease is overlooked entirely or diagnosticated as some other affections. It has occurred to me several times to have had patients referred to me for some trivial rectal trouble and found cancer instead. One would think that of all diseases affecting this portion of the body that cancer could be most easily told. If we take the books as guides I can very readily see that a faulty diagnosis is quickly arrived at. If we are to believe that such symptoms as pain, hemorrhage, and the discharges, are characteristic, and that the odor is pathognomonic, then cancer is quickly told. But when it is a fact easily demonstrated that cancer may exist without even one of these symptoms being recognized, it then becomes a matter of much confusion. You might ask, have we not in the microscope an infallible resource for diagnosis? I would answer, I think not. Upon five different occasions has the microscope told me that I was dealing with a carcinoma when the after treatment revealed the fact that it was not so. I am inclined to believe that about as much as we know on this subject was known many years ago. "The cancer cell is widely different from the gland cells, and they are grouped differently from the natural cells." What are we to do, then, when dealing with a suspected case of cancer? Take the general clinical history, with symptoms, to aid our diagnosis.

Tuberculous.—This is a more common form of ulceration of the rectum than is generally supposed, reversing, in my opinion, the verdict in the case of benign ulceration. Koch's discovery of the *tubercle bacillus* has thrown much light on this subject, and aided us materially in the treatment or all forms of tubercular affections. The treatment of tuberculous joints, bone, tissues, etc., has nearly been revolutionized by this dis-

covery, and although it has knocked out of joint that old and most sacred teaching of heredity, it has done much for the afflicted. It had become almost a part of theology to believe that the sins of the father were visited upon the children for generations, but it is unorthodox (medical) for one now to believe that consumption is hereditary. I have seen many cases of tubercular ulceration of the rectum that went on to a fatal termination, without the slightest sign of tubercle in the lung. The diathesis bears such unmistakable symptoms that it is hard to mistake.

Specific Ulceration.—That syphilis is the cause of ulceration of the rectum no one will deny. That it is responsible for fully one-half of the cases, I am fully convinced. Although I have been criticised for saying this, I am more convinced every day that it is true. I have taken occasion before to say that whenever I see a well-pronounced case of ulceration of the rectum, and can clearly eliminate cancer, then in the majority of cases it will prove to be syphilitic.

It is estimated by a late writer that fully six million people in the United States have syphilis. Admitting that it often shows itself in the form ulceration in the rectum, it is no wonder that the estimate in numbers could occur. One does not have to be in rectal practice long until he is surprised at the number of such cases met with.

Having just incidentally referred to the four causes of ulceration of the rectum without going fully into the ætiology, you will permit me to refer in few words to the

DIAGNOSIS.

I know of no class of disease that requires more absolutely a correct diagnosis than do these. The treatment must in every individual case depend upon a correct opinion of it. We cannot treat a benign ulcer as we would a malignant one; nor a tubercular ulcer as a specific one; nor the last named as the first named.

Benign ulceration must begin as a lesion to the mucous membrane. The term trauma here would be most appropriate. Therefore, a history of a wound, or anything that might lacerate, break, or in any way damage the membrane, must be sought after. Of course the class of ulcers called irritable cannot be considered in this article. They have one symptom that will always diagnose them, viz., pain coming on directly after stool, and a search reveals the ulcer on, or embracing the sphincter. The appearance of a benign ulcer is very different from any other character of ulceration. Its edges are hard and resist invasion. The base and margins are likewise, and a quick disposition to heal exists with the slightest treatment. In other words, an innocent ulceration in the rectum is very much like the same located anywhere else. A malignant ulceration possesses properties directly opposite to the benign type of ulcers. Their disposition is to infiltrate, and break down. No treatment will prevent this. The edges and base quickly yield and the ulceration rapidly extends. I would much rather trust to these conditions to tell me the nature of the ulceration than the so-called pathognomonic signs of bleeding, pain and odor. The tubercular ulcer is closely allied to the malignant one in general appearance and some characteristics. It bleeds freely when touched, is disposed to break down and sometimes its progress is rapid. One characteristic, however, is that the process is painless. I have seen cases of this kind where the buttock was nearly destroyed, involving the rectum, and the patient complained of but little pain. There are two things, however, that will quickly aid in the diagnosis:

1. The diathesis, which is easily discerned.
2. The discovery of the special bacillus.

In malignancy the peculiar color or cachexia is secondary to the existence of the primary cause, the tumor. In tubercle, ulceration is secondary to the diathesis. The physical signs of cancers are nodules, those of tubercle, a ragged and irregular edge.

Cancer begins subcutaneously as a growth and ulcerates afterward.

Tubercle begins either as an ulceration or cold abscess.

The discharge from a malignant ulcer is pus, or pus mixed with blood; from a tuberculous ulcer, broken-down tissue serum, and an occasional pus-producing microbe.

Outside of all physical signs, the microscope would make the diagnosis in tubercular ulceration.

In the specific, or syphilitic ulcer, we generally have the history of the disease from the patient or *prima facie* evidence of its existence in symptoms. Besides this the feeling given to the finger is unlike any other character of ulceration—not nodular, as cancer—nor ragged, as tubercular. Nor does it possess that distinct appearance of the benign ulcer. It is not circumscribed by a wall of lymph either, for it comes from the ulcerating process of a gummatous deposit, and may extend for inches up the rectum. It is more insidious than cancer, and yet attended by all its horrors; in other words, just as incurable after it gets a good foothold in the rectum. It is slower in its progress than cancer, but cruel in the length of time it takes to destroy. The most terrible cases of it that I have ever seen have been in pure, virtuous women, the victims of the husband's vices.

Treatment.—I can barely allude to treatment of these different ulcerations and will make it suffice to call attention to the methods briefly:

Benign.—Local application.

Malignant.—Extirpation.

Tuberculous.—The curette.

Syphilitic.—Anti-syphilitic treatment. Colotomy, local medication, extirpation.

In the treatment of the first-named, benign ulcerations, it is absolutely necessary to have rest for the part. Mr. Hilton gives us a most excellent hint in this regard in his little book called *Rest and Pain.* Every surgeon has recognized how utterly fruitless have been his efforts to heal ulcers on the lower extremities while his patient persisted in walking about. So with the rectum, if it is to be used every day in evacuating the bowels, that disturbance will prevent the healing process. The first thing to be done is to thoroughly purge the intestinal tract; second, confine the patient to bed; third, local applications. Having the bowels purged, a large enema of hot water should be given, the patient put upon a liquid diet and if the ulcer is in the veins and is at all indolent, it should be touched with nitrate of silver or other stimulating applications; after healthy action is established an injection made into the rectum daily of:

℞ Sweet almond oil ℥ j.
Iodoform, gr. v.
Sweet nit. bismuth, ʒ ss.

will do much to cure the ulceration. Every fourth day the patient should be given an aperient. I need not call your attention to the fact that these patients are often treated per mouth for dysentery, which they have not, when a few days of local treatment will effect a cure.

Malignant Ulceration.—In the introduction of treatment I have said that ulcers of a malignant type should be extirpated. I know how common the idea and practise is to resort to colotomy for this condition. By comparison it is in substance this. By a colotomy you do a disgusting operation, and leave the offending mass just where it was; by extirpation you remove or attempt to remove that which is sure to kill if left. By Kraske's operation we are enabled to accomplish that in many cases.

Tuberculous Ulceration.—According to modern thought and investigation we must believe that from any given point of a tuberculous deposit, infection of neighboring or distant parts may take place. The conclusion then is irresistible that said point must be destroyed.

It is clearly demonstrated that if that point be in the rectum the curette is the best instrument or way to get rid of it. In so doing, however, the same hint that is to be observed in removing cancer must be observed here, it must be done thoroughly.

Syphilitic Ulceration.—The ratio of difference between cancer and syphilis of the rectum is in the time that each takes to kill, and the advantage that accrues to the patient will be given to cancer, for it ends the misery much quicker than its competitor, syphilis, which inflicts a long drawn out misery with a certain death. I have often said, and still insist, that where a syphilitic ulceration with coincident stricture of the rectum exists, the condition is just as incurable as cancer.

If then the ulceration is seen in its incipiency, which it really is, we must rely upon

anti-syphilitic and local treatment; if a stricture exists and is within reach it should be resected; if located beyond the reach of the finger and is a close constriction, an inguinal colotomy is advisable. In all these operations around the rectum I am in the habit of using as a cleansing agent, Marchand's Peroxide of Hydrogen. Indeed I consider the preparation indispensable in my work. Whatever strict asepsis will do in wounds elsewhere it is best in wounds around the rectum to use chemical agents, and the best of these is Peroxide of Hydrogen. Not having time to elaborate the points hinted at in this paper, I will close by saying that if any additional light has been thrown upon this very important subject by this paper, I am repaid.

DIPHTHERIA—FALSE MEMBRANE EXPELLED—RECOVERY.

By PERCIVAL LANTZ, M. D., Alaska, W. Va.

(Published by the *Medical Brief*, St. Louis, Mo., January, 1894.)

During my absence at the World's Fair and St. Louis (where I had the pleasure of meeting the genial and scholarly editor of the *Brief*,) Roy W., aged five years, was taken ill of diphtheria. Dr. Hodgson, of Cumberland, who had charge of my practice, was called and treated the case *secundum artem*, and the patient seemed to be getting along very nicely until on Monday, September 18, when he was discharged by Dr. H.

I arrived home on Monday and on the following day was called to see the patient. I found him very much prostrated, breathing sonorously and with great difficulty; croupous cough, unable to speak above a husky whisper, diminished respiratory murmur, and moist bronchial rales. The last two symptoms being ascertained upon auscultation and implicating an invasion, by the false membrane, not only of the larynx and trachea, but also of the bronchi and bronchial tubes. This condition of affairs had existed, I was informed, since the evening before, but the family, not knowing that I had returned, did not send for me. When I arrived at the house, I realized the fact that the case was a critical one, as the larynx, trachea, bronchi and bronchial tubes had been invaded by the false membrane.

As the little fellow had so much difficulty in breathing, his parents were very anxious that I should "give him something to make him breathe better," so I concluded to give him carbonate of ammonia in order to thin and render less tenacious the profuse bronchial secretion, and thus allow it to be more readily expectorated. I did not have any of the carbonate with me, however. so I placed him on the following:

℞ Ammonii chloridi, gr. xl.
Spts. ammon. aromat., ʒ ij.
Aquæ, q. s, ad ℥ ij.

I also ordered inhalations of the steam from hot vinegar, and had the iron and potash mixture, left by Dr. H., continued.

On the following (Wednesday) morning, I called again and found the patient in the same condition, but much weaker. Parents and friends had given up all hopes of his recovery, but I ordered the medicine and inhalations continued, telling them that it couldn't do him any harm and there was a possibility of the false membrane being expelled if it should become sufficiently loosened by the steam and medicine. I did, by the way, suggest intubation or tracheotomy as a last resort, but the parents were inclined to think, from what Dr. H. had told them, that it could only prolong life for three or four days, and so did not consider it worth while to try it, as they felt that the child could not live long under any circumstances.

I was called again on the afternoon of the same day, but before I reached the house (it being five miles from town), the patient had, during a violent attack of coughing,

expelled the false membrane, and though completely exhausted, was breathing very naturally. The membrane, which I still have preserved, is a perfect cast of the larynx, trachea, bronchi, and on one side, of three bronchial tubes. My professional brethren who have seen it say they have never seen or heard of so extensive a cast of membrane being expelled. The patient was very weak for awhile, and was given two teaspoonfuls of whiskey every half hour for thirty-six hours, then the same amount of whiskey every two hours, and in addition 1.130 grain of strychnia sulph., every three hours, continuing the ammonia mixture and a spray in nose and throat of Marchand's Peroxide of Hydrogen. The patient made a good recovery. For a few weeks his voice was considerably impaired, but it is now about the natural tone.

I might state that my treatment of diphtheria varies somewhat according to circumstances. As a rule, however, I give a mixture of tincture ferri chloridi, potassii chloratis, glycerini and aquæ every hour. Also a spray of listerine or Peroxide of Hydrogen, and stimulate the patient. I always give a sufficient quantity of hydrarg. chlor. mite in the beginning of the attack, or when I first see the patient, to move the bowels and often continue it in small doses, say one-tenth grain, throughout the course of the disease. I consider it a good plan to keep turpentine boiling on the stove or over a lamp in the sick-room, and I always have this part of the treatment carried out. The turpentine, either the spirits or oil, should be renewed as often as necessary to render the odor distinctly noticeable by the attendants. Have also found the vapor from slackened lime or hot vinegar very useful, especially in cases of diphtheritic laryngitis.

FRACTURE OF THE SEPTUM NARIUM—IRRITATIVE CONGESTION OF THE TURBINATES.

By CLARENCE C. RICE, M. D.

Professor of Diseases of the Nose and Throat at the N. Y. Post-Graduate Medical School and Hospital.

(Reprinted from *The International Journal of Surgery*, March, 1894.)

GENTLEMEN:

As this is the first time that this patient has presented himself at the clinic, I will give you a brief history of his symptoms. He is a fireman, age 34, and seven years ago sustained a fracture of the nasal septum. He coughs a great deal on getting out of bed in the morning, and complains of a considerable amount of mucus dropping down from the nose into his throat.

This symptom of mucus dropping down the throat, I wish, incidently, to remark, does not necessarily result from a hyper-secretion, but rather is due to an occlusion of the nares, in consequence of which the normal secretion collects in the back of the nasal cavity and is carried into the pharynx by the force of gravitation. This is an important point for you to remember, for in the treatment of this condition we are not called upon so much to use astringents, as to open the nostrils, so that the air can enter and carry off the nasal secretions. If this were a condition of mucous membrane secreting more mucus than it should, then the use of astringents would be indicated. We know from long experience that by opening the nostrils, so that a good current of air will pass through them, this symptom of dropping of mucus into the pharynx is decreased. I wish to say that almost all anterior nasal obstructions are due to trouble upon the septum rather than with the turbinated tissues, and this is very important for you to remember. I have seen cases where the whole mucous covering of the anterior turbinate had been destroyed by some caustic so that the functionating part of the nose had been irretrievably damaged, while the real cause of obstruction, a bony projection of the sep-

tum, had been left untouched. I saw a case of a young woman a few days ago where the whole turbinated covering had been destroyed by chromic acid. You might call such a condition as this a *traumatic atrophic rhinitis*, because the mucous membrane is dry, and the secretions dry into scabs. The pharynx also becomes dry, and there is a condition known as pharyngitis sicca.

Now, so far as this man's external deformity is concerned, we notice a dropping of the nose at its end and a prominence on the right side at the junction of the cartilaginous with the bony septum, as a result of the blow he received seven years ago. The cartilaginous septum should join the bony septum, as you know, in a straight line, but in this case they are placed at an angle to each other.

On examining this man's nostrils we find a few points of interest. In the first place the anterior end of the cartilage is turned to the right, and we see what is called a chondrosis on the left side of the septum—that is a proliferation of the cartilage at that point. Now, what is to be done for this condition? If he obtains a sufficient supply of air through the right nostril—and he seems to—I should not do anything here because the projection of the anterior end of cartilage acts as a protection against the dust. If it were necessary to give him a little more breathing space I should with scissors cut off a piece of this tissue, but I should certainly not adopt this procedure till I had given him a proper amount of breathing space in the other nostril. The important nostril is the other one, and here you see there is a deflection of the septum on itself. Now this convexity corresponds to the concavity just behind this prominence on the other side, and has resulted from the traumatism.

What is the operation necessary in this case? There will be no difficulty in removing, with a straight saw, what is necessary from this cartilaginous prominence. We avoid the danger of perforation by not cutting too deeply, but there are cases where the tissues are so thin that it is impossible to prevent this occurrence. The disagreeable features of perforation are that if the opening is situated anteriorily, you are apt to get a sinking of the nose from lack of support and a tendency to ulceration. We will here, as a preliminary measure to the operation, insert a piece of cotton saturated with an eight per cent. solution of cocaine, and permit it to remain five or six minutes, then we will take a swab, dip into a solution of Peroxide of Hydrogen (Marchand's) and cleanse the nostrils thoroughly. We will not proceed further with the case till we have cocainized the interior of the nostril.

We will now look at his pharynx, and there you see a condition that can be styled a catarrhal pharyngitis, with lymphatic thickenings on the posterior wall. I always like to have the gentlemen look at the pharynx the moment the patient opens his mouth. It was a very red pharynx when we looked at it first, but now, as a result of three or four inspirations through the mouth and evaporation from the mucous membrane, the color has disappeared. Now you notice little points on the posterior wall of the pharynx. That is the same condition you see in children who have enlarged adenoid tissue in the vault of the pharynx.

We see here, a localized congestion of the posterior nasal space, or posterior nasopharyngitis, and our aim is to remove this congestion. We do that in a case like this by curetting the vault of the pharynx, or applying a sixty grain solution of silver to the ounce to the part.

Now to return to this man's nasal trouble, we will remove the cocainized piece of cotton from the septum and excise a portion of this thickened tissue that I call your attention to. As this is a cartilaginous deflexion, it is proper to use a saw or a trephine for its removal. You are able to apply the saw better by having an assistant hold the patient's head at such an angle as to make the enlargement of the septum stand out prominently until the operation is completed. Having removed this portion of tissue we will take powdered boracic acid and blow it into the nostrils, and in ten or fifteen minutes repeat this procedure. The only cleansing we advise here is to have the patient blow his nose thoroughly with a handkerchief, and we use no wash until the third day for fear of washing away the clot that forms. On the third we generally use a posterior nasal syringe with a 25 per cent. solution of Peroxide of Hydrogen.

The next patient is a young man twenty years of age. As we look at his nostrils we observe a slight projection on the left of the septum. This may be a passive or hypostatic congestion and due to a posterior turbinated swelling. Now to improve the condition in this nostril we will use the galvano-cautery, applying it to one little point, for we do not believe in creating a burning wound covering a great extent of surface. We simply make a small line with a cautery which will be sufficient to contract the general soft swelling.

There was a time when I would have called this a hypertrophy of the inferior turbinate, and perhaps would have applied the galvano-cautery, chromic acid or some other destructive agent. If you take a probe and press on the swelling of the inferior turbinated, you will find that you can push the tumor back. There is no real enlargement of the inferior turbinated, but a reflex swelling due to obstruction elsewhere.

How are we to treat such a condition as this? We should not apply any destructive agent to this part because we want it to remain intact. We might term this trouble reflex or irritative congestion due to the pressure of the septal spur against it. Rather than destroy the mucous membrane which is useful in the man's nose, we might as a compromise measure take a galvanic cautery point and insert it in the inferior turbinated down near the floor. In that way you get a reaction of this tissue without destruction of its mucous surface.

Now while this right nostril is a fairly roomy one, it is not quite as large as the left, and as you look well in you see that the middle turbinated bone is in contact with the septum. If a little of that middle turbinated was taken off, the anterior part of the nose would be the better for it, and for that reason we will pass in between the middle turbinated and the septum a pair of scissors and remove a small amount of the tissue. Now as I do this you notice the retraction of the anterior swelling.

TREATMENT OF ACUTE AND CHRONIC ULCERS.

By JAMES OSBORNE DeCOURCY, M. A., M. D., St. Libory, Ill.

(Published by *Louisville Medical Monthly*, August, 1894.)

I have found no class of diseases yielding to treatment with greater reluctance than "old sores," or chronic ulcers. Recently, however, I have adopted a plan of treatment which is quite different from that laid down in the books, and my results have been much better.

Almost without exception, internal, or constitutional, as well as local treatment, is necessary.

The internal treatment should be directed to the seat of the malady, thus eradicating the general pathological condition, eliminating the poisons and disease germs from the system.

To accomplish this object, absolute cleanliness internal and external, plenty of pure air and sunshine, the religious observance of the laws of hygiene, and a wholesome nutritious diet are more useful and restorative in many instances than are drugs. All the secretory organs of the body should be required to perform, as nearly as possible, their natural amount of work.

This once accomplished, and all nature's machinery kept lubricated and in good working order, the local treatment and work of reconstruction will be comparatively easy.

The sores must be kept clean. This is done very satisfactorily by the application of hot water. If the parts can not be soaked in the hot water, an ordinary fountain syringe can be filled with water (as hot as can be borne, without burning), elevated high enough to give sufficient velocity to the stream which is played over the parts, by the operator holding the nozzle of the syringe a short distance from the seat of the application. The frequency of the washing will depend upon the nature of the case, but should be repeated as often as necessary to keep it clean and free from offensive odors.

To destroy pus and bacteria, and to aid nature in the work of rebuilding the parts invaded, I have found Hydrozone and Glycozone superior to any and all other agents tried.

Hydrozone is first applied (after the hot water) by the use of an ordinary glass dropper, or hard rubber syringe, slowly, all over the ulcer, until the pus is destroyed.

Chemical action with ebullition immediately follows and continues until the enemy is quite dead, but no longer. One layer of absorbent cotton is saturated with Glycozone and placed smoothly over the parts, and held in place by a cotton bandage, sufficiently tight to hold the cotton in place.

Other local medication might do as well in some cases, but I have not so found it. The result obtained in the case I report herewith seems to confirm the statement as above made.

Edw. K., aged twenty-three, American, but German descent. A farmer by occupation; unmarried. Rather small in stature, but well-built. Having taken sixteen bottles of "Blood purifier" and a lot of "Anti-constipation pills" within the last eight months for "Falling sickness," came to my office March 19th, with both legs most frightfully ulcerated, from knees to ankles, with considerable discharge of pus from various parts of the legs. Such a case should have been sent to a hospital or sanitarium, for the best systematic treatment obtainable; but, unfortunately, he was so situated that he could not be sent to such a place. In a most pleading way, he asked me if I could do him any good. I told him I thought so, if he would mind me, and take the treatment that I would advise. He promised, and the treatment was begun.

The legs were cleansed by soaking them for twenty minutes in hot water, twice a day, after which Hydrozone was used freely all over the sores, to destroy the pus, the pustules having been opened, and as much pus evacuated as possible.

After this application, morning and evening, the legs were powdered all over the affected portion with a mixture of equal parts of alum, boric acid and aristol, then covered with absorbent cotton, and bound up with an ordinary cotton gauze bandage,

This local treatment was kept up for two weeks. The improvement was slow, but constant. The process of healing advanced from the knees downward, and from the ankles upward, leaving the last part to heal about the middle of the leg, where the ulceration formed a thick crust, extending two-thirds around each leg.

The constant discharge of pus from the sores caused the dressing to stick to the parts, which could not be removed without difficulty.

The alum, boric acid and aristol powder was discontinued, and Glycozone used as a reconstructive agent, from the end of the second week. The sores were washed and the Hydrozone used as before mentioned, then the Glycozone was applied to the whole affected parts. A layer of absorbent cotton was saturated with Glycozone, and smoothly placed around the sores, and held in place by a cotton bandage.

There was no further trouble about the bandage adhering to the sore. The granulation was much more rapid than at first. At the end of the second week after Hydrozone and Glycozone were used as the sole local agents, the young man said he was well and worked every day from that time.

The internal treatment was changed from time to time as the case required. Opiates were given several times during the first two weeks of the treatment, to ameliorate the pain, which was very great at times. He was emaciated and melancholy when he first came to me. His bowels would not move without cathartics.

Fluid extract of nux vomica was given morning and noon, seven drops before each meal. Elixir lactopeptin, with bismuth, was given in drachm doses after each meal, and, occasionally laxatives at night. Later on, tincture chloride of iron was given in ten drop doses, after each meal, for one week.

After the third week no internal treatment was given, as the patient was in good condition, and cheerful.

Hydrozone and Glycozone were left to complete the structure, and place upon it the capstone of a beautiful new integument, which they did in a way gratifying both to the patient and to myself.

THE TREATMENT AND CURE OF CHANCRE WITH PEROXIDE OF HYDROGEN.

By WILLARD PARKER WORSTER, M. D., New York.

(Reprinted from the *Journal of Cutaneous and Genito-Urinary Diseases*, for February.)

The subject of the best treatment of the primary sore of syphilis has occupied the minds of investigators of late years to such an extent that almost every surgeon has a different method, and the general practitioner is somewhat at a loss to know which is the best treatment to employ as the most expeditious means of relieving the anxiety of the patient and curing the lesion. The special purpose of this paper is to draw attention to a particular method of treatment, which not only relieves the anxiety of the patient and places him in a delightful bouyancy of mind, *but cures the chancre in the shortest possible time*, without pain or detention from business, and with less scar and less destruction of tissue than any other method.

The chancres of the following cases, selected from a good many recorded, were of the large Hunterian variety, embracing the worst forms of sloughing and phagedena.

Case 1.—Mr. K., aged 38 years, came to me, January 29, 1891, with a large sloughing single chancre, situated on the right side and at the base of the glans-penis, and at the junction of the prepuce and very deep; incubation about thirty days; penis large and soft. Sprayed it with full strength solution (15 volumes) of Peroxide of Hydrogen medicinal (Marchand's), at 60 pounds pressure, and dressed with iodol powder, and continued the same treatment every morning at 7 o'clock.

February 20, sprayed it as above; sore now only skin deep, and continued till February 23, sore healed; duration of treatment, twenty-five days.

Case 2.—Mr. W. B., came to me, September 6, 1892, with a single sloughing chancre on left glans penis, and corresponding ulceration on prepuce; incubation about thirty days; sprayed with Peroxide of Hydrogen full strength, 60 pounds pressure, and dressed with iodol; continued same treatment every evening at 7:30 o'clock, for sixteen days.

September 23, sore almost healed.

September 25, sprayed for the last time to-day; duration of treatment, nineteen days.

Case 3.—Mr. L., aged 28 years, came to me, August 23, 1893, with a phagedenic chancre, thirty-five days' incubation, situated immediately at meatus urinarious, and sloughing its way very rapidly into the urethra; sprayed it with Peroxide of Hydrogen, full strength; 60 pounds pressure, and dressed with iodol powder. Continued the same treatment every evening at 7:30 o'clock.

August 30. Sore almost healed up, only some granulations left. Continued the same treatment every evening till September 4. Sprayed it to-day for the last time; there only being the surface of the sore about the size of a pin's head. Considered himself cured and said he would not come again. Duration of treatment, eleven days.

The above cases selected from many recorded cases, on account of their possessing the worst features of the initial lesion, serve as good examples of the treatment by the Peroxide of Hydrogen method.

I treated Mr. K., of Case 1, on two different occcasions, for the same disease, in exactly the same manner, and the two cases are about identical in regard to length of time of treatment and as to details, and he got well in about the same manner.

The case of Mr. L., presented the worst features of phagedena, which was so virulent that I think he would have lost the greater part of the glans penis, if he had been treated by the nitric acid or caustic method, and as it was, the ulcer healed with a very small scar, scarcely noticeable.

The pressure of the spray (60 pounds), which is one of the most important factors in the whole method, not only cleanses and produces thorough asepsis of it, killing the

germs of the disease at the very bottom of the ulcer, but the oxygen of the peroxide aerates the blood through the capillaries, and arrest the progress of the disease at the nearest possible point, allowing the process of repair to commence as soon as possible, according to the severity of the disease, with the least loss and destruction of tissue and consequent scar. It must be particularly understood that in using this treatment, all instruments, spray-tubes and bottles, must be made of either glass or hard rubber, for the reason that metals, with one or two exceptions, coming in contact with the peroxide of hydrogen will destroy its component parts and render it useless, and I have found also a greater difference in the results if the peroxide is fresh or otherwise. The first effect of a spray of peroxide upon the ulcer is to deposit upon it a thick film of albumen; this should be allowed to remain for about half a minute or less; then continue the spraying till a large tubeful has been used (one ounce); as the sore progresses the spraying causes a good flow of rich arterial blood upon it which merely shows returning healthy conditions.

The treatment is entirely painless, and the patients do not experience any annoyance or inconvenience whatever while carrying the disease, and freely express themselves as well pleased with its effect.

No internal medication during this stage is given. The iodol powder is used only as an antiseptic, to protect the sore from external influences until it is sprayed again the next day, keeping the sore in as good a condition as it is left by the spraying, which must be done once every day until the ulcer is healed.

This method of treatment of chancre has been in my hands, the best and most successfull of all methods that I have heretofore adopted.

THE TREATMENT OF TYPHOID FEVER.

By M. A. CLARK, A. M., M. D., Macon, Ga.

(Published by *The Food*, June, 1894, also the *Medical and Surgical Reporter*, Philadelphia, Aug. 4, 1894.)

The first duty of the physician, in the treatment of any disease, is to pay strict attention to prophylaxis and hygiene. This is especially applicable to the successful management of typhoid fever.

With proper attention to these, the majority of cases of typhoid fever will recover without any medicinal treatment. Hence, we should be very wary in making any decided claims for medicines. We do know, however. that there are remedies which will not only mitigate the symptoms but also shorten the disease itself. Such being true, it is the duty of every physician to seek diligently for those remedies and to judiciously and faithfully apply them.

In this paper I propose to set before you what seems to me to be the best of these remedies.

Before referring to the subject proper allow me to say that I fully believe that this disease is due to some powerful germ, no doubt the bacillus of Eberth, which produces not only very marked lesions in the parts invaded but also very decided nervous phenomena and great waste of the whole system. If we, then, can find some remedy that will check this dread germ in its ravages and destroy the poison it produces, we have found that remedy that will prove a most powerful adjuvant in the management of this disease. Our hope, then, lies in the antiseptic treatment. In fact, it seems to me that this plan of treatment is par excellence the one from which we may hope to derive any decided results.

Henry claims best results from thymol; Rossbach and Wolff, from naphthalin; Pepper, from nitrate of silver; Thistle, from salol; while calomel is urged by others. All of these are, no doubt, good and well worthy of trial. Having had such good results from the use of another most powerful antiseptic, I beg to offer it as the one for

treatment of this disease, even though it falls short of the definition of an intestinal antiseptic as given by Bouchard: "It should be more or less insoluble and exert no toxic action on the organism." This remedy exerts no toxic action upon the system, but it is soluble, being in itself a solution.

I refer to hydrogen peroxide, which all will admit is a most potent antiseptic when locally applied. Seeing such excellent results from its local use, I ventured to test it as an internal antiseptic, believing that it would prove most effective. Having been rewarded with most wonderful results in the few cases in which I have used it, and feeling so sure of its continued effectiveness, I offer it to you for your consideration on this occasion.

If given at onset of the disease, it will not only mitigate the severe symptoms but will also check the disease itself. The tongue will rapidly clean off; tympanites will subside or not appear at all; the diarrhœa will diminish; no marked nervous phenomena will ensue; and the disease will spend its force with but comparatively little wear upon the system.

I give from 20 to 40 minims of some reliable 15-volume solution, preferably Marchand's, well diluted, every two or three hours until slight nausea is produced, and then every four or six hours till convalescence is fully established.

With its use from the beginning I find no necessity for antipyretics, the temperature never rising sufficiently high to authorize their use. If, however, it becomes necessary to resort to some means of reducing the temperature, I prefer phenacetine in 5 grain doses every four or six hours. The Brand method may work well in hospital practice, but it cannot be used effectively in ordinary private practice. If the phenacetine is followed by, or given with, a mild stimulant and used only to reduce high temperatures, there will be no unpleasant effects at all. I cannot say so much for the other coal tars, or even quinine.

I begin at the outset to attend carefully to the diet of my patients, striving to prevent all the waste possible by giving proper nourishment. Milk is by far the best diet. Given in small quantities and at frequent intervals, it is usually well borne. If not well tolerated, it may be peptonized and then given without ill effects. Horlick's malted milk, beef tea and some reliable beef extract are usually easily assimilated and are valuable aids to the milk. Solid food is rigidly withheld.

Water should be given, not only in connection with the medicines, but also at frequent intervals, whether called for by the patient or not. It is cooling and refreshing to the patient, aids in the elimination of poisons from the system by its diuretic effects upon the kidneys, and keeps up the normal amount of body-fluids. It should be deemed one of the important factors in the treatment of this disease.

The mineral acids, inasmuch as they are aids to digestion, should be given in small doses well diluted three or four times daily. I prefer dilute nitro-hydrochloric in ten minim doses three times a day.

Alcohol should no longer be considered routine treatment but should be used only when the symptoms absolutely indicate. Properly treated, few patients will require the frequent use of any alcohol. When used, it should be given most cautiously, as too much will cause unfavorable symptoms and is worse than not using at all.

Turpentine stupes, or turpentine locally applied, may be used with benefit, whenever there is tympanites. I find it unnecessary when using Peroxide of Hydrogen.

If the diarrhœa is excessive, as many as six or eight stools in twenty-four hours, it should be controlled by nitrate of silver, bismuth or some other astringent. I prefer bismuth subnitrate in 15 to 20-grain doses or salicylate in 5 to 10-grain doses every two or four hours. I have no trouble with the diarrhœa, but if it should become troublesome; I would employ in connection with the bismuth occasional enemata of weak solutions of hydrogen peroxide, having found them very effective in the summer diarrhœas of children.

If the Peroxide of Hydrogen is given from the onset of the disease, the so-called typhoid phenomena, low muttering delirium, subsultus tendinum, picking at the bed

clothes and so on, will not occur. If, however, I should be so unfortunate as to have to deal with them, I would rely solely on the sedative dose of calomel. It will quiet such nervous phenomena when nothing else will, and, too, without any unpleasant effects upon the organism.

Other complications must be treated according to the usual methods. I believe, however, they will rarely occur, if this treatment is used from the beginning.

During convalescence, it is very essential that the patient be rigidly dieted. The liquid diet, with a little broth, milk-toast, soft boiled eggs, should be given till the third week of convalescence, and even then solid food should be used most cautiously.

I herewith submit two cases illustrative of the results of this treatment:

James R., age 10; family history good; previous health good. Had been sick with typhoid fever ten or twelve weeks and was in the beginning of the second relapse, so-called, when I was called in. Having been poorly nourished, he was anæmic and much emaciated. Saw him first in the afternoon. Temperature 106 F., pulse 140, weak and irregular, marked tympanites, pain and tenderness in right iliac region, very restless, slight delirium at intervals.

Gave three grains of phenacetine, with four teaspoonfuls of brandy every four hours to reduce high temperature. Gave Peroxide of Hydrogen one ounce during the twenty-four hours. Milk at frequent intervals. In 36 hours temperature was under control, tympanites rapidly disappearing, delirium absent, patient comfortable and begging for bread. Continued the Peroxide and nourishment. In one week the temperature was normal and convalescence was well begun. Recovery was rapid and complete.

Annie L., age 9; family history good; previous health good. Had just returned from a visit to a place where there was an epidemic of typhoid fever. Had been sick a little more than a week when I first saw her. Symptoms showed a case of typhoid fever of no mild type.

Began at once with 20 minims of hydrogen peroxide every three hours. Gave 5 minims of dilute nitro-hydrochloric acid three times daily. Milk in small quantities and frequently repeated. Used phenacetine and salol 1½ grains each to control restlessness and produce sleep during the first two days. Afterward, continued the Peroxide and nourishment. In less than three weeks temperature was normal and convalescence was fully established. Recovery was rapid and complete, there having been comparatively little exhaustion of strength and vitality.

PEROXIDE OF HYDROGEN (MEDICINAL).

By Dr. G. W. PICKERILL.

(Reprinted from the *Medical Free Press*, Indianapolis, Ind., June, 1894.)

He who does not avail himself of the superior benefit of Peroxide of Hydrogen (Marchand) in the treatment of open wounds, ulcers, scrofulous and syphilitic abscess, "sores," etc., as a corrector of morbid action and pus destroyer, is denying himself of the most powerful agent yet introduced for such purposes. Its beneficial effects are seen at once in the destruction of fetid pus and other morbid products when applied to an old scrofulous or syphilitic sore.

Two cases of syphilis with large open sores will illustrate the rapid action of Peroxide of Hydrogen. The first was a most formidable affair of seven years' standing; the open sore involving ⅞ of the ankle joint—with the joint enlarged to twice its healthy size. This sore had been dried, patched and healed over a number of times, but such a healing proved of no permanent benefit, for the sore would soon open in a worse state than before. There had been no effort to clean the morbid, dead products from the base of the ulcer, thus "dried" and "scabbed" over became, as a matter of course, a source of irritation and ulceration. Such procedure is very bad surgery for any kind of ulcers.

A few weeks' treatment with Peroxide of Hydrogen (Medicinal) dressing with Glycozone, and the ulcer was as clean and healthy looking as need be, and proceeded to heal from bottom and edges without further trouble. And remains healed and healthy. Will keep patient under appropriate constitutional treatment for two years.

Case second was of more recent date. Knee involved. Although had had constitutional syphilis, the action in the knee was more the character of tuberculosis of the joint. Proceeded to suppuration, opening just below the patella. Treated with Peroxide of Hydrogen and Glycozone locally.

The recovery was all that could be desired.

Not so perplexed with these syphilitic and tuberculous ulcers and abscesses since Peroxide of Hydrogen and Glycozone were handed to us.

HYDROZONE.

By W. C. WILE, A. M., M. D., LL. D., Danbury, Conn.

(Reprinted from *The Prescription*, July, 1894.)

It was that brilliant young surgeon, Dr. Robert T. Morris, of New York City who, when he read his paper four years ago, entitled "The Necessary Peroxide of Hydrodrogen," touched a key-note which echoed through the world.

Many indeed knew of its uses and value, of course, before this time, still the masses of the profession were practically ignorant of its wide range of usefulness and the wonderful, almost magical power it possessed, let alone the knowledge of the fact that such a product existed.

Morris related his experience which started men thinking and active, while the result was great good to suffering humanity and a rapid stride toward exactness in the science of medicine.

We feel quite confident that when he turns his attention to the new product of Charles Marchand, Hydrozone, that he will be much more enthusiastic about it, as Hydrozone is stronger and superior to Peroxide of Hydrogen.

Hydrozone is twice as strong as Peroxide and twice as active.

It works with much greater rapidity, hence more effectively, for in every operation, no matter how trivial, it is essential that it be performed as quickly as is consistent with good and thorough work in order to lessen shock, and anything that will reduce the time to a minimum, will be sure to attract the immediate attention of the conscientious and progressive surgeon, and meet a hearty reception.

The point we mean to lay particular stress upon at this time, is the powerful hæmostatic action of Hydrozone. In this respect it excels anything else that we know of for rapidity of action and effectiveness of work.

This is particularly true of the venous and capillary oozing. This form of hemorrhage is many times the most troublesome and difficult we have to deal with, especially when it occurs in a cavity which it is necessary to dry well before closing and applying dressings.

It is not, however, confined to this class of hemorrhage, as a recent case that came under the editor's care will illustrate. A lad nine years old while attempting to chop some kindlings, let the axe slip, and the heel of the instrument penetrated the instep of the right foot, severing an artery.

There was no ether at hand and the office a long way off, while every effort made to pick up the artery resulted in almost convulsions in the excited and nervous boy. A pledget of cotton was saturated with Hydrozone, and well packed into the wound, dressing the whole with gauze bandages in abundance. The hemorrhage ceased at once,

and the dressings were allowed to remain *in situ* till the following morning when the patient was put under an anæsthetic and the wound properly dressed. No ligation was necessary and the case made an uninterrupted recovery.

Dr. Elmer Lee, of Chicago claims also that Hydrozone is better than the peroxide for internal administration, he having given both in a large number of cases of typhoid fever.

PEROXIDE OF HYDROGEN IN CONJUNCTIVITIS.

(Published by *Medical Fortnightly*, April 2, 1894.)

Lautenbach, *Therapeutic Gazette*, advocates the use of Peroxide of Hydrogen in conjunctivitis. He has been quite successful in the treatment of this troublesome disease by the following method: From 10 to 30 drops of the solution, full strength, is instilled at the outer canthus of the eye, and with the fingers a degree of massage is applied over the entire surface of both eyelids. A second, third or fourth application can be made if necessary. In trachomatous cases the eyelids should be everted and rubbed with the rubber end of the eye-dropper. A saturated solution of boric acid is then used to irrigate conjunctival cul-de-sac. The inflamed surfaces are thus cleansed and ready for whatever application is necessary. The treatment is not intrusted to the patient, but is performed by the surgeon himself, once or twice a day, or a few times a week, according to indications. Dr. Lautenbach says it is important to have peroxide test beyond ten volumes, that it should not lose its oxygen on slight change of temperature, and, most important of all, that it should not contain any free acid. Undue amount of free acid causes pain and untoward effects. On account of the uncertainty of preparations fit for use, Marchand's should always be procured. The lids should be everted and thorough exposure of conjunctiva had; it is then cleansed by warm solution of boric acid.

HYDROGEN DIOXIDE.—H_2O_2.

By L. D. KASTENBINE, A. M., M. D.

Professor Chemistry, Urinology, and Medical Jurisprudence Louisville Medical College; Professor Chemistry Louisville College Pharmacy.

(Published by *Louisville Medical Monthly*, July 1894.)

This remarkable liquid which contains the greatest percentage of oxygen of any compound known, was for some time, considered as a mere solution of oxygen in water, and consequently was called oxygenated water. It was afterward obtained free from water and found to be a definite chemical compound of hydrogen and oxygen, and differing from water in containing twice as much oxygen. In this state it is a heavy, oily liquid, readily decomposing at ordinary temperatures, but if heated, with explosive violence, being converted into ordinary water and oxygen gas. When poured into water it sinks, being nearly half again as heavy as that liquid, but is miscible in all proportions with it. It has a somewhat bitter, astringent taste, and is colorless, transparent and without odor. It contains 94 per cent. of oxygen gas by weight, and will yield 475 times its volume of that gas. It bleaches the skin, hair, ivory and destroys organic coloring matter, pus and all organisms with which it comes in contact by liberating oxygen gas in a nascent or active state. It is resolved in oxygen and water by certain metals, such as gold, platinum, silver and mercury in a state of fine subdivision, although the metals themselves undergo no change whatever. If the oxides of these

same metals are brought in contact with it, not only does the hydrogen dioxide lose oxygen and become water, but the oxides lose their oxygen and are reduced to the metallic state, thereby evolving an additional amount of oxygen.

Strange as it may appear, with all its energetic oxidizing action, it has no effect on phosphorus, a substance which is so readily oxidized by the air.

The preparations found in commerce are only solutions of this compound in water, and sold in different degrees of concentration or strength, rated by the number of volumes of oxygen gas they can be made to yield. A fifteen volume solution is one that will give off fifteen volumes of gas from one volume of the solution. A ten volume solution will yield ten pints of oxygen gas from one pint of the solution, and so on.

These solutions, although more stable than mere concentrated preparations, nevertheless decompose and lose their nascent oxygen on which its powerful antiseptic powers depend, and consequently we find the commercial brands varying considerably from their reputed strengths. The solution I find containing the greatest percentage of available oxygen, is the preparation known as Marchand's, which, when perfectly fresh, is about a fifteen volume solution.

There are quite a number of different methods of preparing aqueous solutions of this interesting compound besides the original method of Thenard, the discoverer. Usually, however, barium dioxide in the hydrated state and purified from all foreign matter, is decomposed by such acids as will make an insoluble compound with it. The United States Pharmacopœia has adopted this compound under the official title of Aqua Hydrogenii Dioxidi, gives a process of preparing it and describes it as a slightly acid aqueous solution of hydrogen dioxide, containing, when freshly made, about 3 per cent. by weight of the pure anhydrous dioxide, corresponding to about 10 volumes of available oxygen. It is made by the action of phosphoric acid upon barium peroxide. It must be borne in mind that it is essential to employ a small amount of free acid to preserve these solutions, but if too large a quantity it would be a source of irritation when applied to denuded surfaces and inflamed mucous membranes, and consequently, officially, a preparation requiring more than 0.5 c. c. of volumetric caustic potash solution to neutralize .50 c. c. of it, does not come up to the U. S. P. standard.

Of the various brands of commercial dioxides I have examined, I find Marchand's to be the one which yields the largest amount of available oxygen under all conditions of exposure, and the one which contains the minimum percentage of free acid. All the marketable articles I have seen are free from barium compounds, but the majority do not come up to the fifteen volume standard, but are 6, 8, 10 and 12 volume solutions.

In addition to its medicinal uses, hydrogen dioxide can be employed to detect blood, in conjuction with freshly prepared tincture of guaiac. Although tincture of guaiac turns blue with a variety of substances, blood is not one of them. So in testing for a stain—say on clothing—moisten the spot with water, and afterwards apply a piece of white filter paper; the slightest straw-colored stain on the paper suffices. Now, add to the spot on the paper a few drops of the guaiac tincture—no coloration. Add a few drops of the solution of peroxide, when instantly the spot turns of a deep azure blue. Of course if the spot turns blue by the guaiac alone, it can not be due to blood, yet it is possible blood may be present in some other substance which has that property, and hence the employment or peroxide, in that case, would be a source of fallacy. If there is no bluing by guaiac and peroxide together, then absolutely no blood is present.

Hydrogen dioxide can be determined quantitatively by permanganate of potassium solution acidified by sulphuric acid, and the quantity of oxygen gas evolved measured in an instrument called a nitro-meter, and calculated for normal pressure and temperature. One half the oxgen evolved comes from the dioxide and the other half from the permanganate solution.

Another method and the one commonly employed, is to add a volumetric solution of permanganate of potassium from a burette to a measured portion of the hydrogen dioxide solution, diluted with water and acidulated with sulphuric acid, until the permanganate solution is rendered colorless, and then a few drops more of that re-agent

employed till a permanent faint pink coloration is given to the dioxide solution to indicate the completion of process. A slight calculation will give the strength of solution. There are other methods but the two indicated are the best.

A solution of Peroxide of Hydrogen is usually tested by pouring a drachm of it in a clean test tube, together with an equal quantity of ether, then pouring into the tube a few drops of bichromate of potassium solution, and shaking the tube, when the ethereal layer will become a beautiful azure blue color, due to the formation of perchromic acid which dissolves in the ether.

To a few drops of nitrate of silver solution, add aqua ammonia enough to precipitate the oxide of silver, then add hydrogen peroxide when finely divided metallic silver separates. A solution of titanic acid in oil of vitriol and diluted will yield a yellow color when added to solutions of the peroxide.

DISEASES OF THE ALIMENTARY CANAL.—TREATMENT.

INTERNAL AND EXTERNAL HYDROTHERAPY.—MEDICATION.

By JAMES OSBORNE DeCOURCY., M. A., M. D., St. Libory, Ill.

(Read before the St. Clair Co., Ill., Medical Society, June 7, 1894.)

Cleanliness is said to be next to godliness—a very old adage which I have found to be no less true in the treatment of all diseases which have come under my observation. It is my custom to first make clean my patient, outside and inside so far as practicable, by the free use of pure water and good soap. I have never seen or had a bad result from the use of these agents. I am of the opinion that in many cases all the medicine that is needed is the free, judicious use of water, abstinence from food, plenty of pure air and sunshine.

These agents, together with a clear conception and observation of the laws of hygiene will figure very conspicuously in the future of medicine.

While I am a strong advocate of the free use of water in the practice of medicine, I also have confidence in the therapeutics of drugs, and as I believe, have seen many good results from the intelligent use of them.

In the treatment of diseases there are three distinct steps. They are: 1, correct diagnosis—ascertaining the cause; 2, absolute cleanliness by irrigation internally and the free use of water externally; and by the use of disinfecting agents; 3, repairing the damage—healing the wound—or assisting nature in her work of reconstruction. This should be done by the skillful use of the tools best adapted to the work to be done.

In treating diseases of the alimentary canal generally, and in the three following cases which I report to you I have endeavored to follow the foregoing principles. My results are all that could be desired. They have been both interesting and profitable to me, and I trust they may be of some interest to this society.

Case 1.—Miss Mary; aged 29; American; Faun type; medium size and rather stout; was taken at night with pain in the lower bowels, followed by watery stools.

I was called in the early morning, March 15. Found her excited and suffering very much from pain in the bowels; also complained of severe headache. Temperature was slightly elevated. Pulse regular, but rapid and weak. She gave history of having had several severe attacks of ulcerative colitis, during one of which she came very near to death's door.

There was some tenderness on palpation and percussion over the major part of the abdomen and the bowel was very active in evacuating itself. The stools were thin, and contained mucus with a little blood. When food was taken into the stomach, especially milk, it was usually ejected in curdy masses within a few minutes.

The usual agents were used to abate the pain, to check the vomiting; also to restore the bowel to its normal condition.

The pain was greatly reduced and the rebellious condition of the stomach almost entirely overcome; but the bowel persisted in its active work of draining the system. The stools became offensive, containing more blood and mucus.

A portion of the lining membrane of the intestine about eight inches in length was passed with the feces the fourth day. Having a four ounce bottle of Glycozone, I concluded to try it. So other internal agents were discontinued, and 2-drachm doses of Glycozone given every four hours in a wineglassful of water. The bowel was washed out morning and evening with warm soap water, followed by an ounce of tepid water containing an half drachm tinct. opium.

At the end of the first day after beginning the last method of treatment there were marked signs for the better; and the patient expressed herself as feeling less bad. The treatment was continued with constant improvement in the case until the Glycozone was all taken, at which time the bowel and stomach were under good control. Pain was all gone; and after a few days of convalescence the patient made a perfect recovery without any further treatment.

CASE 2.—Ely, aged 32, medium-size man, general health uniformly good; blacksmith by trade. First saw the case at 3 P. M., March 30.

On arrival at bedside of patient, I found him in what seemed to be a semi-comatose state. The odor of whiskey was very marked. Examination of the matter ejected showed it to contain blood and mucus.

A few drops of chloroform with cold water was given, and a cold pack placed over the epigastrium to check the vomiting. The following preparation was given to quiet the stomach and to move the bowel:

℞ Calomel, gr. viij.
Podophyllum, gr. ij.
Subnitrate of bismuth, gr. xij.
Bicarbonate of soda, gr. iv.

M. Pulvis, No. 4. Sig. Dose, one powder every hour.

The father, mother and wife of the patient gave the following history:

"For the last five years the patient has been drinking whiskey, and for the last two years, in particular, he has been drinking too much. Last October he had an attack somewhat like this, but recovered in about one week.

"His general health has always been good. He has been drinking too much every day for a week now—keeping his whiskey in the shop. He was well this morning. Worked in the shop until noon. Ate a hearty dinner, but was taken sick soon after eating and in a short time began to vomit."

Called again at 5 P. M. Found him quiet, but suffering. Left some Dover's powders to be given during the night if necessary.

At 2 A. M., March 31, was called again. Found him excited and suffering very much. Quick pulse and slight elevation of temperature. Gave him hypodermic injection:

℞ Morph. sulph., gr. ¼.
Atropin, gr. 1-150.

His wife gave history of his vomiting at irregular periods until 10 P. M., after which time nothing would pass either up or down. Impossible to swallow water. Upon careful inspection the whole mucous membrane lining the mouth and throat as far as could be seen was in a state of hypertrophy. Indeed it was simply cooked. (Pardon the use of the word, cooked; but it expresses the condition.) The stomach, also, was in a state of inflammation. What was to be done?

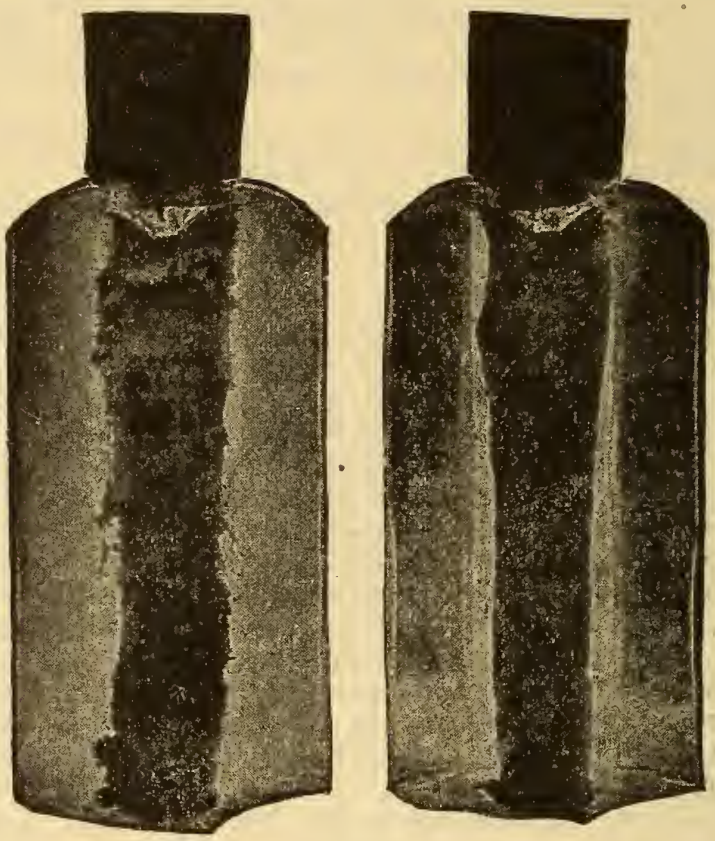
Internal medication and alimentation was out of the question. Recognizing the emergency of the case, I determined, if posssble, to dissolve the mucus about the affected parts, and to attempt to reduce the œdema of the membranes.

The nose and throat, therefore, were sprayed every twenty minutes for awhile with

Hydrozone and a twenty per cent. solution of the same used as a gargle every hour, until he could swallow water, which required forty hours. An enema of warm soap-water was given and repeated, which produced a soft stool; and he expressed himself as feeling better.

The spraying of nose and throat together with the gargle, also the enema, were continued every day. The inability of the patient to swallow made alimentation by the stomach impossible, to say nothing of the incapacity of the stomach to perform the work of digestion. Boiled milk and warm soups were regularly given in small quantities per rectum.

On the morning of April 7 the whole lining membrane of the esophagus was expelled in the attempt to vomit. The membrane was neither broken nor perforated; but was turned inside out. I have preserved the spicimen in an alcoholic solution; and take pleasure in presenting it herewith for your examination.



"A" "B"

Photograph of the mucous membrane expelled from the esophagus of Ely. Cut "A" illustrates the ragged surface of the membrane as torn from the muscular coat of the tube.

Cut "B" illustrates the smooth surface of the same membrane over which food was passed, the membrane being turned inside out, just as when expelled. The size of these cuts is two-thirds that of the photograph of the esophagus. The cardiac end of the membrane being at the bottom of the cut in each case.

There was some fever most of the time. The temperature running up as high as 102° F. The pulse varied from normal up to 90, and a few times went up to 100.

The general condition of the patient was fairly good—indeed much better than could have been expected.

There was little headache, but a lancinating pain in the left hypogastric region which was greatly accelerated by coughing; and there was more or less tendency to cough during the first week.

I might state here parenthetically that, in my judgment, the trouble in the side had no connection with the conditions of the mouth, throat and stomach; but on the contrary, was entirely and wholly independent of it

The history given of the case showed the last named trouble to have been produced some five years ago by prolonged arduous labor in which the abdominal muscles were in constant strain for hours. Since which time the trouble has returned at different periods; and almost invariably following protracted, or great straining of the muscles in that region. The treatment given was palliative.

The odor coming from the mouth of the patient was offensive from the first, and continued to grow more and more offensive until after the expulsion of the membrane.

The kidneys performed their work fairly well. The stools which followed the enema of warm water were rather soft and of a greenish color.

There were no hallucinations, no delirium; and for the most part sleep was good.

To prevent septicæmia, to assist nature in the work of reconstruction, as well as to counteract any miasmatic influence that might be present the following solution was given:

℞ Quininæ sulphatis, ʒij.
Acidi sulphurici aromatici, ʒ j.
Aquæ camphoræ,
Aquæ destillatæ, aa ℥ ij.

M. Sig. One teaspoonful every two hours, being alternated by half drachm doses of Hydrozone, 20 per cent. solution, given in a third of a glass of water.

Gradually, but slowly, the condition of the patient grew better, with the exception of one day, at which time he had no Hydrozone. The other medicine "Would not work without the gargle," as he expressed it; "But worked well together."

Immediately after resuming the use of Hydrozone he began to feel better. Saw him April 9. Found him in good condition. Pulse and temperature normal. Expressed himself as feeling very well.

He had been sitting up most of the time for several days. I recommended that the treatment should be continued for some time.

A week later his wife called at my office stating that she thought he was doing very well. Since which time I have had no official report from the case.

My candid opinion is, that of all the agents used, the one to which he owes the preservation of his life during the first seven days of the attack, is Hydrozone.

Case 3.—Bennie, little boy, age 9 years, orphan, German, was brought to my office May 20. Had diarrhœa which had become chronic. Also had intermittent fever —mild form. He was very much emaciated.

Various and numerous agents from the list of ordinary remedies were used during the four succeeding days; but the diarrhœa was growing worse rather than better. The stools became very numerous, the actions amounting to ten or twelve at night with as many more during the day. The malarial fever received appropriate treatment and was readily subdued.

May 26 I planned a new treatment. The patient was thoroughly sponged from head to foot once a day with tepid alkaline water. The bowel was washed out *clean* morning and evening with soap-water, just warm enough to be comfortable to the patient. After the bowel was washed out, two ounces of starch-water containing two drachms of Glycozone was thrown into the rectum, and left to be absorbed. The internal treatment consisted of a milk diet, fresh water to drink, impregnated with Hydrozone, and teaspoonful doses of Glycozone taken every two hours during the day in a wineglassful of fresh water.

Improvement began with this treatment. The skin and bowel was kept thoroughly cleansed every day as well as medicated, the bowel being irrigated twice each day. June 4, the child was reported well. His general health is rapidly improving.

What effected the cure? My answer is this:

1. Removing the cause. This was done by abstinence from all solid food. Aliment was restricted to small quantities of pure, fresh milk, beef and chicken soups, given at regular periods.

2. By cleansing the affected parts, as before stated.

3. By healing the wound. This was done by the use of Glycozone, which I have found to be one of the most reliable and rapidly-healing agents that I have yet used. The Hydrozone was used as a disinfecting agent.

May we not reasonably expect that during the remainder of the present decade, and for all time to come internal as well as external cleanliness will be to suffering humanity a boon—an heavenly unction?

NOTE.—I have, for some time, substituted Hydrozone in my practice instead of Peroxide of Hydrogen, as formerly used.

Hydrozone is "double strength" Hydrogen Peroxide—so to speak. In other words it has twice the bactericide power, and, therefore, requires only one-half the quantity to accomplish the same results.

It is not disagreeable to the patient when taken internally, if well diluted with pure, fresh water.

CHOLERA.—PREVENTION AND TREATMENT.

BY ELMER LEE, A. M., M. D., PH. B., NEW YORK,

(Reprint from *The Chicago Clinical Review*, for April, 1893.)

A mass meeting of physicians, for the consideration of the above subject, was held at the Great Northern Hotel, Saturday evening, March 18, 1893, under the auspices of the Practitioners' Club, of Chicago. There was a large attendance.

Dr. C. D. Wescott called the meeting to order at 8:20 P. M., and Dr. DeLaskie Miller was chosen Chairman of the meeting in the absence of Dr. N. S. Davis.

Dr. Miller in his opening remarks said: This is an unexpected honor, to be called upon to fill the place of the gentleman who is unavoidably absent; but as the Chairman of this meeting is to be little more than a figurehead, I will accept the honor with thanks. This is an important meeting, and I trust that the attention and interest of it will be given to the gentlemen who will occupy the time. Without further remarks we will proceed to the business before the meeting.

After remarks made by several medical gentlemen on the different phases of the subject of Cholera, Dr. Elmer Lee, of New York, read the following paper.

The leading proposition suggested and tried in the treatment of Asiatic cholera, during the epidemic of 1892, in Europe, consisted of the following general plans. Early in the epidemic, lactic acid treatment was proposed on the ground that it would neutralize the alkaline accumulations in the bowel, and so stop the multiplication of the bacilli.

An Englishman, residing in Paris, considered Cholera a hyperæmia of the spinal cord. His proposition was ice poultices continuously applied to the region of the whole spinal column. A small pamphlet was published by the doctor in defense of his conclusions, and to present testimonials in favor of his congestion theory. As this system of management was not seriously considered by cholera physicians, its efficacy cannot be stated.

The use of large doses of the Russian remedy, salol, the invention of Prof. Nenski, of St. Petersburg, grew in favor as a new remedy during the epidemic. The average result of cases so treated in St. Petersburg, and by my American colleague, Blackstein, in Baku, and in other provinces in Southern Russia, could not be said to be satisfactory. Finally, at the close of the epidemic, its influences had come to be considered less and less valuable—this, however, can be said—it was in all and all more largely used than any other remedy. Still it would not be safe to put too much trust in it.

Calomel was everywhere a remedy even more used than salol. Formerly this drug was used in very large doses, but last year it was the very small doses that found favor. Especially was this true in the treatment of cholera in Hamburg.

Of the surgical measures, the infusion of solutions of salt were most practiced. The solution consisted of distilled water in which was dissolved one-half of one per cent. of common salt. This liquid was warmed to the temperature of the blood, and either introduced directly into some large vein, or injected, with a long needle and a large barrel syringe, beneath the integument of the abdomen. The amount of salt solution used in either case would be from one pint to one quart each time. In one case treated at Hamburg as much as thirteen quarts of salt water were used from first to last. The patient recovered. The subcutaneous injections were frequently followed by cysts and sometimes abcesses appeared. Intravenous injections sometimes proved a godsend, but more frequently disappointment could be said to be the result. These injections were only used in the third period of the disease, or the stage of collapse, algidity or asphyxiation, at which period, it would be rather unreasonable to expect recovery by virtue of any treatment.

The Italian treatment, as it was called in Russia, was much used and with frequent gratifying success. The practice was introduced by Prof. Cantani. It consists of a clyster composed of the following constituents.

Boiled water or infusion of chamomile (warm), 2 litres.
Tannin, 4 to 10 grammes.
Laudanum, 5 to 10 drops.
Powdered gum-arabic, 50 grammes.

This or some part of this solution is occasionally passed into the rectum, to be retained if possible by the patient. In the experience of those who have followed this method of treatment, almost every case taken at the beginning of the disease has lived. It is certainly more reasonable in principle than simple drug management.

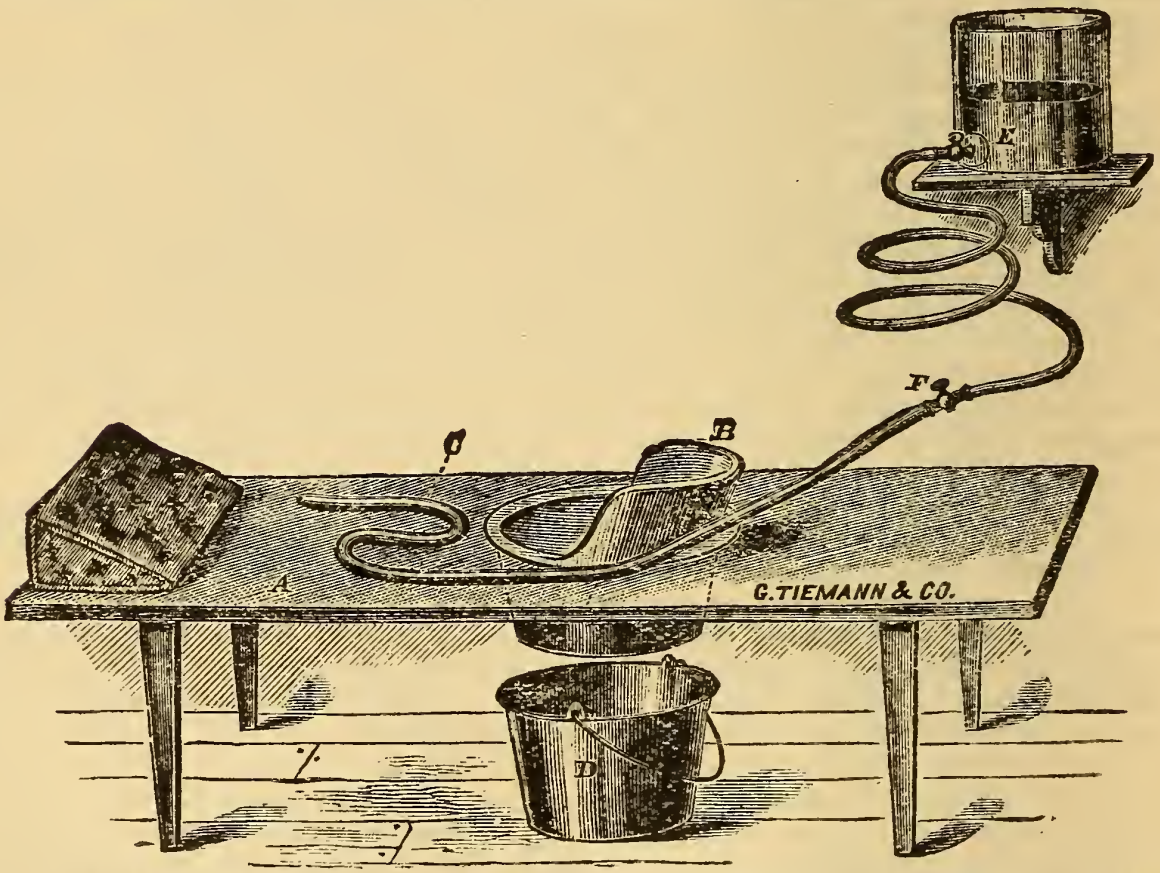
Of the experiments of Ferran, of Spain, and Haffkine of the Pasteur Institute, much has been said, but what has been said has failed to bring conviction to my mind. As cholera itself cannot be said to protect one who has had the disease and recovered, against a second attack, then that which is less than cholera in influence cannot be expected to do it. The seat of the disease is located in the intestines, and, so long as the infectious juices are there, the lymph vessels, in the processes of physiological function, will continue to infect the blood. Can we hope to thwart physiological action of absorbents by hypodermatic injection of cholera culture, made at some time, it may be years previous to the date of the passing epidemic? The answer by my judgment, is that such expectations are flimsy. The caprice of Stanhope at the Hamburg Hospital cannot seriously pass for an argument in favor of anti-choleraic vaccination. His interesting but widely exaggerated stories were the product of a newspaper's love for sensation, and profit of increased sales of newspapers.

My own personal thoughts concerning cholera and the method of treatment, as practiced by me both in Russia and at Hamburg, during the epidemic of 1892, will occupy the remaining time allotted to me.

It is now well known that cholera is a disease of the alimentary canal. Its inciting cause is believed to be a germ taken into that canal through the medium of food and drink. There its presence is protested against by the absorbent vessels, which eliminate from the food the nutriment for the body. The first symptom produced by foreign invasion in the intestines is a diarrhœa, which may preceed vomiting from one to three or even four days. If this be true, the bowels must be the seat of disorder, and the most direct method of reaching them by medication must be the best. If the stomach could be emptied of the foul material before the poison has passed further, there might be speedy relief and, indeed, no real cholera. After it has passed into the intestines, medicine administered through the stomach may be slow in reaching the seat of the disease, and even then can only mingle with the poison, holding out the hope that the one will be neutralized by the other. This hope, in truth, is seldom realized. But if the poison can be removed from below, the course is left clear for nature to recuperate itself. The diarrhœa is an evidence of the great exertion put forth by the organism to rid itself of the death-dealing agency, and probably it would be effectual in the great majority of cases, were it not that the nervous forces of the system are exhausted by the

terrible strain, before the required evacuation of the bowels is completed. A large irrigation of hot water, made soapy, preferably by neutral liquid soap, introduced into the colon through a suitable rubber tube, is the simplest, and I am prepared to say further that it is a more satisfactory way of treating cholera than any other with which I am acquainted. The time to begin the irrigation is at the very earliest possible moment. Save the blood every single moment of infection by immediate action even if there is the faintest suspicion of cholera either with or without diarrhœa. In every post mortem seen by me in cases of death in which there had been no marked diarrhœa, the colon and intestines were filled with accumulations of choleraic matter, which swarmed with coma bacilli. The rule from which there need never be deviation is to treat the patient by irrigation of the bowels and rinsing of the stomach without waiting for confirmation of the diagnosis either with the microscope or by the culture test. The best part of the practice is always to save the patient, even at the expense of fine statistics. The accompanying illustration explains the manner of using irrigation of the intestines. Such apparatus is suitable for places of public treatment of the sick. In private practice the syringe would take the place of the irrigating apparatus.

The irrigation is accomplished by means of a soft rubber tube F, one meter in length and of suitable size to be introduced into the rectum, in front of the promontory of the sacrum, into and up through the sigmoid flexure and into the descending colon. This tube which is connected with a glass reservoir E, should not be too small nor too



(Dr. Lee's apparatus for irrigating the intestines for the cure of cholera and other bowel diseases. Used first in St. Petersburgh during the cholera epidemic of 1892.)

large in order to facilitate its introduction through the folds of the sigmoid portion of the lower bowel. In fact, the greatest difficulty to be encountered, is to successfully pass the tube in front of the promontory of the sacrum, and enter into the sigmoid flexure. The tube should be of proper firmness to prevent it from bending or buckling upon itself when the end (which in all cases should be rounded) comes in contact with the obstructing folds of the intestine.

For internal treatment my experience taught me that the *medicinal Peroxide of Hydrogen of Marchand**, given in cupful doses of the strength of 4 per cent., or even much stronger, was a better antiseptic than any other drug heretofore known in the treatment of cholera. Then the treatment would be, first, immediate irrigations of hot water and soap, using from one to three gallons at a time twice a day for the first and second days. Once a day afterwards, if required, which is seldom the case. At the same time cleanse the stomach with *medicinal Peroxide of Hydrogen** and hot water used freely—by urging the patient to drink. The feeding and nursing are the same as would be required by a patient suffering from septicæmia or other prostrating disease. My belief is based upon personal experience, and the following surgical measures and medical treatment, viz.: Irrigation of the bowels, *always first* with hot water made soapy with neutral liquid soap or a good castile soap; second, cleansing and rinsing the stomach with hot water and *medicinal Peroxide of Hydrogen**, continuing till it is well washed; third, food and nursing; fourth, *medicinal Peroxide of Hydrogen of 4 per cent, strength** given in cupful doses at intervals of two hours during the sickness till convalescence; fifth, meet the requirements as they come up, as would be done in any other grave disease, using whatever personal experience has taught us to believe is good. Cleanse the bowels, wash the stomach, feed the sick, keep them warm if cold, and reduce excessive heat by the cool bath rather than reliance upon drugs, using anything in an emergency that is the easiest and the most accessible to procure. The cholera patient may be convalescent inside of the first few days, or if not convalescent and not dead, the case goes into the typhoid state, after which convalescence may be deferred for several weeks, or death may be the conclusion. The temperature prior to the fifth day is generally subnormal or a little above, but on the fifth day marked exacerbation and elevation of temperature indicates the typhoid condition.

THE CHAIRMAN: It is a most fortunate circumstance that we are alive to-day. We must all of us feel confident that we have passed from the old to the new dispensation, which cannot but strengthen our faith like the anchor cast within the vale. We know what cholera is; we know that we can limit its spread in our city. This is a great confidence, and will do much for the comfort of this community. This idea should be spread throughout the length and breadth of this great city.

NOTE.—Since reading the foregoing paper, Hydrozone has been substituted by Dr. Elmer Lee instead of Peroxide of Hydrogen for reasons given on page 47, article headed Treatment of Typhoid Fever.

CHRONIC CERVICAL ENDOMETRITIS.—OSMOTIC TREATMENT.

BY WALTER S. WELLS, M. D., NEW YORK.

(Reprint from the *Chicago Medical Times*, July, 1894.)

Acute inflammation affecting the uterus, shows a marked tendency to invade the entire organ, and to involve both the body and the cervix.

But chronic inflammation, being of a lower grade of intensity, is more apt to be limited to the mucous membrane of the body of the organ, or of the neck.

There is, however, nothing absolute as to such limitation—sometimes subjacent parts being more or less implicated, and in other cases the mucous membrane of the entire organ may be simultaneously involved.

The term, chronic cervical endometritis, is here applied to chronic inflammation of the mucous membrane extending from the os externum to the os internum. This condition, like many others, has been described under various titles, and is known as Cervical Catarrh, Cervical Leucorrhœa, and Endocervicitis.

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*Hydrozone now takes the place of Peroxide of Hydrogen, the strength is double, the dose one-half. See note.

It is regarded as the most frequent of all diseases of the female genital organs, and although not itself a malady of dangerous character, may give origin to some of the most serious and obstinate uterine disorders.

The cervix uteri being exposed to injury during coition,—to laceration during parturition,—and to irritation from walking, riding and lifting, it is not surprising that it is frequently the seat of disease.

The chronic cervical inflammation is a frequent cause of menstrual derangements, and frequently produces sterility—the tenacious, thick glairy discharge from the cervical glands preventing entrance of the spermatozoon.

The cavity of the cervix uteri is described in text books as a fusiform canal measuring about one inch and a quarter, beginning at the os externum below and ending at the os internum above. The mucous membrane lining this cavity is estimated to contain in a well-developed virgin cervix, at least ten thousand mucous glands.

The mucous membrane in which these glands caleld the glands of Naboth are imbedded, is covered by cylindrical and ciliated epithelium and studded by villi, especially in the larger rugæ.

Occlusion of the ducts of these glands causes their distension with mucus, when they form small translucent cysts, and if they are large enough to project like peas from the surface are known as "ovula nabothi."

The natural secretion of the cervical canal has been shown by M. Danne to be alkaline—while that of the vagina is acid. Cervical endometritis consists of inflammation of the structures named, the disease being one of glandular inflammation. The glairy mucous, which is secreted in large amount as one of the symptoms, is the charac teristic discharge in this disease.

In patients who have died from some other cause, but having this disease also, an examination of the parts with a magnifying glass has disclosed the Nabothian glands enlarged and elevated, with their mouths dilated.

In some cases there is granular degeneration, the villi or papillæ being involved. In time, an hypertrophy occurs in the villi, which increase in size, project like so many hairs from the surface, and give to the os and cervix the appearance termed granular degeneration. The condition affects the vaginal portion of the cervix principally, but may extend up the canal. Another pathological state may be found; an eversion of the os and lower portion of the canal to such an extent as to keep up inflammation there by the friction of the membrane thus exposed against the floor of the pelvis, rendering the case obstinate. The thick tenacious mucous which is poured forth is loaded with epithelium, and may be tinged with blood.

The causes which *predispose* to this disease are impoverishment of the blood, frequent parturition, subinvolution and tight lacing. The *exciting* causes are laceration of the cervix, flexions of the uterus, excessive coition, endometritis, injury and efforts to produce abortion and prevent conception, and the use of intra-uterine pessaries.

Many of the causes mentioned would fail to produce it in a uterus which had not been prepared for their action by depressed conditions of the general system. Cervical endometritis may exist for a length of time before it is recognized, the patient not complaining of the discharge. The first symptoms probably, which do attract attention, will be dragging sensations about the pelvis, followed by pain in the back and loins, which will be aggravated by exercise.

In time the leucorrhœa will be noticed, the discharge having come to resemble boiled starch or thick gum water, and often irritating the vulva and vagina to such an extent as to inflame them. Menstrual derangements may follow, the mense become too scanty or too profuse, too frequent or too dilatory. Occasionally decided dysmenorrhœa exists. Generally before the disease has continued long, the constitution of the patient becomes affected. She becomes nervous, irascible, moody, and often hysterical. Her appetite will diminish, and digestion grow feeble, causing impoverishment of the blood.

This condition may continue for some time before complications supervene, but cystitis, cervical hyperplasia, and vaginitis may develop, proving very troublesome.

Pain during sexual intercourse is regarded as indicative of the development of cervical hyperplasia, rather than of the endometritis, the former becoming added as a complication to the latter. Nausea and vomiting sometimes present themselves as symptoms, aggravating the disgestive disorder mentioned, as well as deteriorating the nutrition of the already impoverished blood.

Upon making physical exploration, the patient lying on her back, the finger of the examiner will probably find the os uteri in its usual position in the pelvis, the weight of the uterus is not increased, the connecting tissue not being involved. The os may be somewhat enlarged, and its lips slightly puffed, or it may be roughened on account of granular degeneration. Sometimes, however, severe cervical endometritis may exist without enlargement of the os or any trace of abrasion or granular degeneration.

If the finger be placed under the cervix and that part raised by it, pain will be complained of, but it will be most marked opposite the os internum.

The speculum will disclose the cervix usually somewhat enlarged, its tissue swollen, puffed, and intensely red if its investing epithelium is removed and there is hypertrophy of the villi. But cervical endometritis may exist, affecting the glands of the canal, without abrading the lips of the os, in which cases, without removing the plug of mucous, the os is seen to be no larger than it should be, its tissue is not reddened, no degeneration exists, nothing visible to explain the backache, nervousness and impaired nutrition, except the profuse glairy, tenacious discharge.

The cervical cavity, in nulliparous women, may be found distended by the accumulation of the thick cervical mucous which is prevented escaping by a small external os. The cervix then has an elliptic form and is out of proportion to the size and shaed of the body of the uterus.

Cervical endometritis is not a self-limiting disease, and if unchecked, frequently in multiparous women, passes into cervical hyperplasia, with displacement, and other ills which add to her annoyances.

If the mucous which marks inflammation of the glands be slight in amount and not very tenacious in character, the prognosis is favorable, but if a considerable amount of thick, yellowish, stringy mucous hangs from the cervical canal, the prognosis is discouraging as to any definite time when a cure may be predicted, especially in a woman whose general health is impaired.

Even in mild cases of some duration from four to six months or more will be required to effect a perfect cure and even then a relapse is likely to occur. General and local treatment must go hand in hand in the management of these cases, as it is well established that by improvement of general health and hygienic surroundings, the local disease is benefited.

It will probably not be amiss at first to relieve torpidity of the liver and constipation by triturates of calomel, ¼ gr. at bedtime, followed in the morning by seidlitz salt or Rochelle salt, repeated from day to day, *pro re nata*. The value of quite warm water injections, 85 to 100 degrees F. or more, daily, and especially at bedtime, have been recognized from time almost immemorial.

Great good is effected by suitably medicating the water for vaginal injections and for this purpose one part of zymocide to four or five parts of water at 100 degrees F. answers an excellent purpose, especially if we add half an ounce of boracic acid to each quart of the above mixture, in the bag of the fountain syringe generally employed.

The tube (vaginal) should be of hard rubber, the central distal (uterine) opening closed to avoid throwing the injection into the uterine cavity, and about five inches in length.

The dorsal recumbent position is preferred. With the hips elevated, the shoulders lying lower, the abdominal viscera gravitate toward the diaphragm by which the vagina is lengthened and its whole cavity may be flooded with the injection, a portion of which remains around the cervix until the erect posture is resumed.

The patient may be placed with her hips resting on the edge of the bed, with feet

on two chairs, and a rubber sheet so folded and placed beneath to elevate the hips, and its folds hanging over a tub below to catch the return fluid.

Or, the patient may be placed by her nurse and supported in the knee-chest position, if it is thought desirable to further distend the vagina with hot water disinfecting injections and to retain the same in longer contact with the os and cervix.

The position itself, through the influence of gravitation, materially aids the rectifying certain displacements of the uterus and diminishing pelvic congestions.

Having used these injections for a few days, both in the morning and at bed time, the parts will be in condition to commence the Osmotic method of medication, which we usually commence by inducing profuse exosmosis of serum from the capillaries, to further unload the surrounding blood vessels and lymphatics and thus accomplish depletion and reduction of congestion.

This has usually been accomplished by the topical application and retention around the cervix and os of pledgets of antiseptic cotton saturated in glycerine. But since we have used glycozone, which is glycerine subject to the action of ozone and made powerfully antiseptic by the Marchand method, we prefer it to plain glycerine, although the latter may be made antiseptic in a less degree by admixture with carbolic and boracic acids.

In using glycozone we prefer the prepared lamb's wool, a suitable sized pledget of which is tied around with a string, for easy removal by the patient, and being saturated with glycozone is seized with the dressing forceps and passed through a widely expanded speculum and deposited directly to the os and cervix.

If pain, locally, is a prominent symptom, ¼ to ½ grain of morphine may be incorporated with the half ounce of glycozone used and the pledget is to remain *in situ* twenty-four hours.

Belladonna or aqueous ext. opii may be substituted. the former being credited by Trousseau and Ringer with properties, diminishing the secretion of the nabothian follicles, as well as acting as an anodyne.

The pledget of glycozone will have exhausted its exosmotic influence by the end of twenty-four hours and being removed may be followed by an injection as before.

The tamponade with glycozone may be repeated every third day, alternating with the injections of hot water with zymocide until the parts have lost the appearance of congestion, when the treatment may be extended within the cervical canal by means of the cotton wrapped hard rubber probe applicator. The distal extremity of the probe being coated with a thin film of prepared cotton, and the cervix having been cleaned and dried with absorbent cotton, the wrapped probe is dipped into the selected fluid and any excess pressed out against the walls of the vial and then gently passed into the cervical canal to the os internum, and allowed to remain a few seconds before withdrawal.

Any overflow from the os should be wiped away. Many combinations have been tried. Iodine is preferred by some, it not being altered by the secretions of the cervix as most medicaments are. The officinal tincture of iodine is too weak. Churchhill's tincture (iodine gr. xxv; potassic iodide, ʒ iss; to alcohol, ℥ i.), very much stronger is often to be preferred.

A good tincture is one from ♁iiss to ʒ i of iodine to ℥ i of alcohol, with a small quantity of potassic iodide to facilitate solution. This can be applied to the cervix and canal once per week.

Iodo-tannin (tannin dissolved to saturation in the foregoing tincture of iodine, may at times be beneficially substituted; also carbolic acid, liquefied crystals) used at the same intervals acts as an anæsthetic locally rather than as a caustic, is a favorite with some gynecologists. So also is iodized phenol (2 parts of iodine with eight parts of carbolic acid.) In these obstinate cases the physician will need to have several combinations with which to alternate the local treatment. We have of late used with benefit the medicinal Peroxide of Hydrogen. The probe applicator is wrapped at its distal end with a thin film of aseptic cotton and being dipped into a solution of equal parts of

the Peroxide of Hydrogen and zymogen, the probe is gently passed up and down in the cervical canal and renewed as long as the foamy discharge shows the presence of pus or the canal is cleansed.

We then select a suitable sponge for osmotic treatment, one sterilized and bleached by the Marchand method and with its string attachment for easy removal, saturate it with equal parts of zymocide, Peroxide of Hydrogen and warm water, pass the same by aid of dressing forceps up through a widely expanded speculum in contact with the os and cervix, leaving it there for about twenty-four hours.

The patient then removes the sponge by its string and has it cleaned in warm, weak ammonia water, and it is ready to be again medicated and adjusted as before.

Perhaps a more efficient method of bringing the Peroxide Hydrogen within the cervix is by means of the cervical syringe, first devised, I believe, by Munde. This applicator syringe with its distal end coated with a film of aseptic cotton and charged with the Peroxide of Hydrogen and zymocide aa q. s., the end is passed within the cervix up to the os internum. A slight depression of the piston forces out a small quantity of the fluid which being retained in the enveloping cotton holds the liquid antiseptic in close relation with the Nabothian follicles to be passed over them frequently, so as to bring the peroxide thoroughly in contact while the foamy discharge indicates the presence of pus in the cervix.

After this direct medication of the cervical canal, the osmotic sponge saturated as before, may be left in apposition with the os for the succeeding twenty-four hours. During this local medication the general nourishment of the patient, it will be inferred from what has been said, must not be neglected.

Profs. Thomas and Munde says that if they were restricted to a choice between local and constitutional treatment in these cases, they would choose the constitutional, unless the local treatment were a surgical operation to remove the entire lot of glands.

Having chosen a suitable bill of fare, digestion and assimilation may be promoted by administering after each meal a tablespoonful of elixir of peptenzyme and one at bedtime following a glass of milk, many patients, as well people, sleeping better after taking a little light nourishment at bedtime.

This new digestant, peptenzyme, contains the concentrated extracts of all the digestive secretions furnished by nature for the digestion of a mixed diet.

Its use with food, especially cream, which it rapidly digests, as well as prepares fats for assimilation, will soon overcome the dyspeptic condition and impoverished blood.

Cases will occasionally be found in which nothing, not even both constitutional and local treatment will put a stop to the discharge from the Nabothian glands and as a dernier resort the late Dr. Sims in such obstinate cases dilated the cervix, and by means of the sharp curette, scraped away completely from the canal the entire mucous lining with its thousands of Nabothian glands.

In very obstinate cases of this disease there is occasionally some other redundant growth besides the Nabothian follicles which may be improved by removal, as cervical hypertrophy granulations around the os and mucous polypi.

After even such small operations the patient should be kept in bed and antiseptic anodyne mixtures used upon the osmotic sponge as dressing to the wounds. It should be remembered that in using the sponge to a raw surface that a cut surface of the sponge should not be applied, or adhesion would occur. The natural surface of the sponge is not liable to adhere.

LOCAL TREATMENT OF UTERINE AND VAGINAL DISEASES.

By WILLIAM C. WILE, A. M., M. D., LL. D., Danbury, Conn.

(Reprinted from the *New England Medical Monthly*, September, 1894.)

There is no class of cases that come under the doctor's care, that cause him so much trouble as those called female complaints, and the more advanced we progress towards civilization, the more frequent becomes the call to do this sort of work, and the

more obstinate they seem to cure. This condition of affairs is largely due to: 1. Corset wearing. 2. The desire to avoid child bearing, with its shifts and expedients, hot water, cold water, medicinal washes, withdrawals, *et al.* 2. Uncleanliness, not keeping these important parts in a sanitary condition. 3. Too rapid child bearing.

The gynecological surgeon has used his knife so recklessly about this neighborhood, that the revolt has come and the cry is, halt! and in emphatic tones. The days of pessaries are numbered, and only in exceptional cases are they used by any body now-a-days, while practical medication deducted from experience is in the van, with therapeutical local applications, which do more for diseased vaginal and uterine tissues than all other methods combined. Chronic inflammations either simple or catarrhal of the cervix, cervical canal, endometrium, and vagina are amongst the most obstinate of all of this class of cases to treat, and give the patient and doctor both a deal of trouble.

My method of treatment for the last two years has been as follows: Correct whatever is out of gear in the general condition, hot water douches from 10 to 20 minutes twice a day. Immediately after this douche with a glass or rubber syringe use one ounce of Hydrozone and one ounce of water, allowing this to remain while the patient lies in the recumbent position for ten minutes. Wash vagina out with water and introduce clear up the cervix one of those indispensable little tablets, Micajah's Medicated Uterine Wafers. These I have found simply invaluable in the treatment of these cases. A cure is readily affected and the patient and doctor alike delighted. (See articles headed, "Treatment of Vaginitis by Peroxide of Hydrogen (Medicinal)," by Herman L. Collyer, M. D., of New York, p. 126; "Peroxide of Hydrogen in Gynecology and in Obstetrics," by Egbert H. Grandin, M. D., of New York, p. 79.

TUBERCULAR ADENITIS OF THE NECK.

HOSPITAL CASES.—FROM THE ST. LOUIS FEMALE HOSPITAL.

By R. M. Kirley, Superintendent.

(From the *Courier of Medicine*, St. Louis, Mo., July, 1894.)

L. I. single; age 20; occupation servant; admitted into Female Hospital June 17, 1893. History: Had given birth to a child sixteen months previous. The glands of the neck began to enlarge two years previous. When admitted to hospital had an itching dermatitis of flexor surfaces of both fore-arms, also of the neck.

The enlarged glands are very tender and painful, at times suffering intense. After using anti-syphilitic remedies for one month without avail, extirpation was determined upon. Operation: On July 21st the superficial chains were removed, six in number, under chloroform. Incision was made along posterior border of sterno-mastoid down to diseased tissues, which were then enucleated. Capillary oozing was quite free but no vessel of importance was severed, although the sub-clavian could be plainly seen, pulsating in the lower angle of the cavity left by the removal of one of the deep glands. As far as could be ascertained, no morbid tissue was left behind in the dissection, which was tedious on account of adhesions to the glands. The wound was closed with interrupted silk sutures, without drainage. The cavity soon filled with blood and the line of incision was painted with iodoform-colodion and an ice-bag applied. Time required for operation, one hour. Patient reacted well.

The removed glands were tuberculous in various stages of the disease, two of which had undergone caseation, and two others had broken down and were apparently about to suppurate through the adjacent parts at time of operation.

On July 26th the stitches were removed, union was perfect except at dependent portion, where there was a superficial nidus of pus. *Washed with Marchand's Peroxide of Hydrogen* and applied dressing—bichloride gauze.

August 2nd, wound healed. August 4th, patient discharged, well.

THIERSCH'S GRAFTS IN EXTENSIVE DESTRUCTION OF SOFT PARTS ABOUT LARGE JOINTS.

By Henry W. Coe, M. D., Portland, Ore.

Reprinted from the *Medical Sentinel*, of Portland, Oregon, September, 1894.

Read by title before the seventh annual convention of the National Association of Railway Surgeons at Galveston, Texas, May, 1894.)

For a comparatively recent procedure and an operation producing such satisfactory results, Thiersch's method of skin grafting occupies very little space in medical books and almost none in medical journals.

Figure 1.

It seems to the writer that no method in surgery has been brought forward in recent years which, in a small way always, and in many instances in a larger degree, produces results which afford such general satisfaction as those given to us by the use of this process of Thiersch. Especially is this true in relation to the treatment of injuries involving the destruction of considerable areas about the larger joints.

We often see the contorted results following the older methods of treatment in cases of destruction of large portions of skin. Especially deplorable have been the results obtained after any other methods of treatment, when the loss of integument has occurred about large joints.

It has been my good fortune to meet a number of injuries in which the integument and underlying soft tissues about great joints have been involved, and in which I have, during these late years, been glad to find in Thiersch's method a satisfactory treatment. I say "good fortune," for the results are so satisfactory that the keenest gratification

must result from one's care of such cases. My excuse for this paper is the dearth of literature upon this important division of modern surgery, and the desire to present two cases in illustration.

CASE 1. A young man, 20 years of age, a kneader in cracker factory, on Oct. 16, 1893, in feeding the dough, had his hand and arm drawn between two rapidly revolving rollers up to a point several inches above the elbow joint. His desperate effort to withdraw his arm, with the crushing force of the machinery and suction of the passing dough, severed the skin above the elbow, except a small shred upon the inner aspect of the arm. At the time of the accident this isthmus was put upon the stretch, the forearm being partially flexed, and the integument was drawn down over the forearm and wrist much like an everted gauntlet.

The patient was taken to the hospital at once, where the grease and other dressings, which had been applied by fellow workmen, were removed and the skin replaced

Figure 2.

as carefully as possible. The wound was kept clean, and after three weeks the tissues destroyed by the force of the injury and loss of blood supply were removed, the granulations scraped down, and the raw surface, which at this time completely girdled the arm at the elbow joint for a space of from three to six inches, was, at one sitting, completely covered with grafts taken from the inside of the patient's thigh. Although only about two-thirds of the grafts "took," the adhering portions were so distributed and so loosely applied that the natural contraction of the tissues, together with their marginal growth, soon covered the wound with new skin. The contraction which naturally took place where grafts did not adhere took the "slack" out of the loosely placed grafts, so that the results were highly gratifying. As the grafts were applied longitudinally upon the arm, any contraction the result of cicatricial tissue formation was not so situated as to act as a band about the arm.

A wound of this nature under the ordinary methods formerly in vogue, and, for that matter, under methods often employed.even at the present time, would have left an elbow joint covered with dense cicatricial tissue, to shrink, harden and crack, and

seriously abridge the action of the joint, as well as to interfere with the blood supply to the parts below the seat of constriction.

At this time, six months after the operation, the young man has as free use of his injured elbow joint as he has of its uninjured fellow. The skin over the region is loose, and has quite a natural appearance, and the circulation below the seat of injury is not interfered with in the least, and the man is now working again at his trade.

Figure 3.

The first illustration shows the wound as it was three weeks after the injury, and at a time when the dead skin, drying up and shrinking, was about ready to fall away. The forearm was still swollen, but the tissues, up to the line of demarcation, were otherwise in a healthy condition.

The second view shows the elbow flexed to a similar degree as in the former view of the arm, with the wound all healed, excepting a small portion of the outer aspect, which is closing up by marginal skin extension. This view was taken about three weeks after the grafts had been applied.

CASE 2. A boy, 16 years of age, whose knee came in contact with a set of powerful cog-wheels, and, as a result, a considerable amount of skin was torn away.

The skin grafting in this case was done upon the superficial fascia four days after the receipt of the injury. The time between the date of the injury and of the operation was consumed in attempting to remove the oil with which it had been dressed, and otherwise make the wound aseptic, the wound being dressed several times a day with peroxide of hydrogen.

The grafts took at once, and the entire surface was healed in about ten days, excepting two spaces of about a square inch each, which required four weeks to cover with cicatricial tissue by marginal extension, while fifty times as much surface adjoining had been covered with soft, pliable integument in a few days only.

The outcome in this case manifestly demonstrates again the happy results to be obtained by the use of Thiersch's grafts after injuries about large joints, in permitting free joint motion and circulation.

The views exhibited in this case, recently taken, eighteen months after the receipt of the injury, show the new skin (cut 3), the leg being flexed upon the thigh at right angles; and, again (cut 4), the new tissue picked up by the thumb and finger to demonstrate its soft and pliable condition, even over a half-flexed knee—a procedure which cannot as readily be demonstrated upon the normal skin of a flexed knee, as any one can ascertain by attempting to pick up the tissues over his own knee.

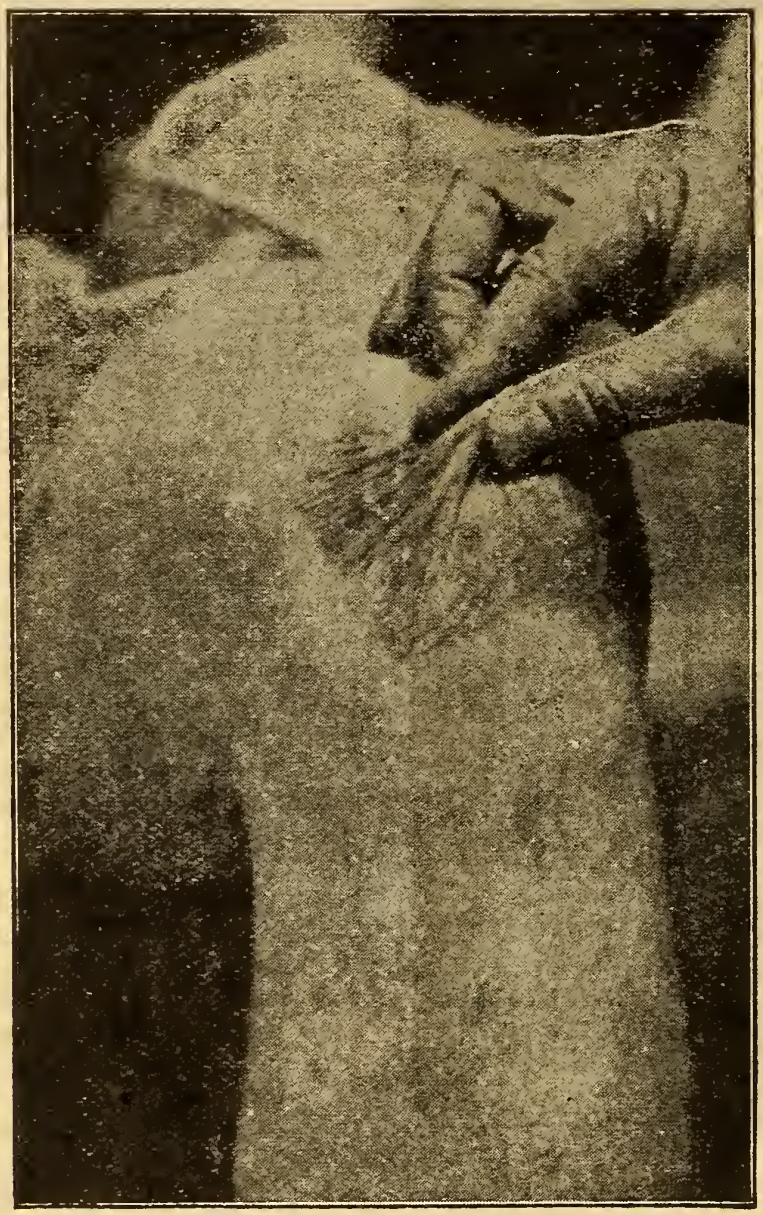

Figure 4.

I believe that my success in the application of Thiersch's grafts has been largely due to the free use of peroxide of hydrogen (Marchand's) in dilute form, used not only before the grafts were placed upon the broken surface but also daily thereafter, to carry away promptly any broken down tissues and to remove any discharge of a suspicious nature. Even when pus microbes have found entrance to such a wound, by the judicious use of this dressing the greater portion of the grafts may be saved and the melting down process aborted.

Later in the treatment I have found the balsam of tolu, upon lint, an excellent dressing to strengthen the graft, and if any open portions are present, as may be even under favorable circumstances, such a dressing will hasten the process of granulation.

One point that I desire to emphasize is that the grafts should be lain on parallel with the long axis of the limb, especially over a joint. By this means, even if but a portion of such grafts become adherent, the cicatricial tissue is broken by loose strips of skin up and down the limb, whereas, if placed over the joint, encircling the same, the failure of a single graft may result in the formation of a band of cicatricial tissue, entirely or partially encircling the limb and interfering more or less with its action and blood supply.

SCARLET FEVER.

By JAMES S. KENNEDY M. D., Chambersburg, Pa.

(Reprinted from the *New England Medical Monthly*, December, 1894.)

So much has been written lately concerning "scarlet fever" that the busy practitioner passes to the next page when his eye meets with the above title but to those who have the good of humanity at heart, I beg for a hearing.

This section of the state (Penn.) has, since May last, been cursed with an epidemic of "scarlet fever," many cases being malignant in character. This contagious exanthema as exemplified here, has been remarkable for the length of time intervening between the subsidence of all symptoms and the desquamation. In some cases desquamation did not commence until the *twenty-first* day and in others it was six weeks before it was completed. The Health Board (God save the mark) allowed the return of all the scholars to the schools without respect to the symptoms in twenty-one days, and in this way contagion was rapidly disseminated through the medium of the common or public schools.

The forms of this dreaded disease, as generally accepted, are simple, anginose and malignant, and in these authors differ widely in characteristics. Most of the cases coming under my notice were of the pseudo-membranous anginose variety. The divisions given above, are in my humble opinion, far from correct, nor are they consonant with the nature of the disease. Scarlet fever is a single and unvarying disease, differing only in degree of severity, produced by one and the same species of bacteria, same in course, requiring no more than does typhoid fever to be divided and semi-divided simply because it differs in severity in different subjects. Look at the picture of the bacteria. These are the germs that do the damage and there is no doubt that they are found in *every* case of this specific disease, either simple or malignant. The essential element of this affection is an inflammatory action of the mucous membrane alike in each case and there never was a well authenticated case, where this inflammation was not present to a greater or less extent. It may be so slight as to cause no uneasiness to the patient or even escape the notice of the physician but it is there all the same, and is always shown under the "microscope."

As to the anginose and malignant type, as they are usually called, the names are of little value for in all grave cases in which death was not due to cerebral invasion, by the third or fourth day, there developed a dangerous anginose inflammation, which although of the anginose variety still was malignant also in character. Its powers of contagion are surpassed by none and its propagation and dissemination by air currents, the physician, visitors, sewage, and a thousand and one other means cannot be successfully combated. There can be no doubt that the activity of its poison remains for an indefinite period of time. For instance this case came under my observation: A certain church was preparing a box to be sent to a missionary in the South and for this clothing, etc., etc., was requested of the congregation by its pastor. A mother who had lost her only child by malignant scarlet fever, *over a year ago*, had preserved a doll and some fine underclothing as mementoes. These articles were stored in a close fitting cedar chest, in the garret. The touching appeal by the minister, influenced her to donate these sacred treasures, and they were included in the box. The missionary's child wore the clothes and played with the doll—contracted scarlet fever—died, and strange to relate it was the only case, far or near, nor was there any further development of the disease in that vicinity.

The exact duration of the septic influence is as yet unknown and no matter how much care is taken, it can be carried away by visitors. No one realizes it more than the writer who taking every precaution, such as baths, change of clothing and disinfection yet carried it to one of his own children, who was too young to get it from any other source. On the other hand we have known children constantly exposed to its

dangers escape entirely. This part of the subject has not been as thoroughly investigated as its importance demands and if our scientists would give more of their time to such practical questions as "public hygiene" and less to investigations that will not do humanity one iota of good, better would it be for the public. Whatever may be the activity of this virus it is an indisputable fact, that it can be disseminated by the clothing of the physician and others, bedding, furniture, and desquamation. As to its not attacking a person a second time, I believe it does so more frequently than is supposed. I am attending a patient now, who one year ago had this disease without one single symptom absent. Her sister who slept with her a year ago escaped the infection at that time, and when this attack developed she was sent away and after an absence of seven weeks she returned home only to contract scarlet fever in five days afterwards. I believe that no matter how severe the disease is in a family the constitution must be in a certain condition to receive, retain and develop the poison.

The age of five years and under, has in my experience produced the greatest number of cases, and I have known of a death at thirty-eight years. Sex does not seem to exert any influence, but most of my cases this summer and fall have been girls. One thing I have never seen noticed is the fact that the person taking the greatest interest and personal care of the patient is very prone to suffer from aggravated sore throat, of a specific nature. Some others of the family may suffer the same way.

The symptoms of this disease are so familar to every practitioner that it would be useless to mention them, but as to the treatment each has his favorite—mine is as follows, nor do I claim anything to be strictly original: From the first rise of temperature and the slightest flush of the fauces, I give aconite, gtt. ij–iv, either in tablet form or tincture, every two hours, followed by belladonna the same dose, one hour after each dose of aconite, until the rash is thoroughly out from head to foot—then the belladonna is dropped and acid carbolici, ʒ ss, olei olivæ; ʒ x. M. Sig. Anoint all the body except the face (on which pure olive oil is used), twice daily—followed at night by a tepid bath—where the cerebral symptoms preponderate, I give in connection with that above, a suppository containing ext. hyoscyami, gr. ss–j, ext. cannabis indicæ, gr. ½–j. camphoræ monobrom, gr. ii–v, lupulin, gr. v–xv. M. Sig. One night and morning. This will allay to a remarkable extent the cerebral symptoms such as delirium, wakefulness and low mutterings, and prevent any tendency to convulsions.

For any stomachial symptoms, Glycozone, ʒ j, aq. distillata, ʒ iij. Glycozone is a powerful oxidizing agent and in contact with the germs destroy them. The above dose may be given every three or four hours. It causes no action on the heart, kidneys or liver.

The local treatment is of the greatest importance, the fauces should at the first indication be swathed externally by a large silk handkerchief saturated in cold water, and over this a woolen bandage to prevent its too sudden evaporation, this is to be repeated every two hours until amelioration of the inflammation is noticed. Besides its local benefit, the temperature is also reduced—sponging over one portion of the body at a time is beneficial. Next in order in importance are remedial applications, and to these specially is this article directed. Hydrozone is by long odds the best local application and constitutional remedy we have in the whole range of materia medica. It has done wonders and will do wonders for you, my skeptical brethren, if I can only persuade you to use it. The following is the proper strength, viz: Hydrozone, ʒ ss, aq. distillata, ʒ iij–vj. M. Sig. Spray the throat, fauces and nasal passages thoroughly every two hours. In this last mentioned medicine we have a comparatively recent addition to our weapons to combat this scourge, and as a germicide annihilator it has no equal and in no disease is this so well shown as in the above named. It possesses virtues peculiar to itself, and no remedy will give the physician, and what is of more importance, his patient, so rapid and beneficial a result as "Hydrozone." Caution should be used in the manner of exhibiting this oxidizing agent, and only an apparatus of glass or rubber should contain it. A glass spoon for internal medication and a glass and rubber atomizer for the spray. No matter how severe the inflammatory process is in the fauces, or how much mucus is thrown out, the spray in a short time will change

the character of the discharge and give a healthy tone to the membrane, and on the second day of use the entire buccal cavity will present a clean healthy color with the inflammation and breathing relieved, and temperature reduced. Saturate the fauces with the spray, and the bacteria present and forming will certainly be destroyed. Try it once gentlemen, and I know the death rate will be reduced and this will not be written in vain.

The action of hydrozone when brought into contact with bacteria of any description, internal or external, destroys them by decomposition almost immediately. Nascent oxygen is liberated, the albuminoids of the diseased part coagulated, the pus corpuscles destroyed, and those in formation utterly routed out of existence. It is energetic, destructive, with absolutely no toxic effect, but at the same time, on account of the chemical action on the albumen, it should not be injected into the circulation. In a voluminous table of bactericide potency, hydrozone stands first, the biniodide of mercury second, glycozone third, with chloride of iron twenty-five on the list. It has been found that lime water, soda bicarbonate, thymol, and eucalyptus have no action on the microbes of pseudo-membranous anginose, when they are once *developed*, but may exert a mild preventative action. Such articles as potash permanganate, hypochlorite of lime, bichloride of mercury, carbolic acid and silver nitrate, do destroy the bacteria, but they are dangerous to the life of the patient, whilst glycozone and hydrozone are perfectly harmless. In the table of comparative strengths of the different germicides, it has been shown that hydrozone is twice as strong as Marchand's Peroxide of Hydrogen (medicinal); 3 times as strong as bichloride of mercury; 5 times as strong as silver nitrate; 10 times as strong as iodine; 28 times as strong as iodoform; 128 times as strong as carbolic acid.

By glancing over the above you will see what a valuable adjuvant we have in the treatment of scarlet fever.

REPORT OF A CASE OF EXTENSIVE GUNSHOT WOUND.

(Published by *The Journal of the American Medical Association*, December, 1894.)

By F. H. BROBST, M. D., Reading, Pa.

On Aug. 2, 1894, I was summoned in great haste to see Mr. G. B., who met with a dangerous accident half an hour previous to my arrival at his residence, by a discharge of a full shell, containing No. 8 shot, from a breech-loading shotgun, into his left side. Upon examination, after anesthetization by the assistant physician, I found the whole contents of the shell, containing about two hundred and fifty shot, had entered three and three-fourth inches to the left of mid-sternum, between the seventh and eighth ribs, fracturing the ninth, eighth and part of the seventh ribs to minute pieces, tearing and lacerating the pleural peritoneum and diaphragm; lung and liver protruding, and impregnated with several shot.

At first sight the case was thought and expected to be entirely hopeless. However, I was determined to do all that could be done, so I excised a great deal of lacerated marginal tissue. I extracted all the pieces of bone obtainable, with numerous shot, and shreds of clothing from lower left lobe of lung and liver; washed out the peritoneal and pleural cavities with a warm bichlorid of mercury solution, 1 to 2500, but could hardly control capillary oozing until, as a last resort, I applied hydrozone half diluted with water, which admirably controlled all capillary oozing, and at the same time acted as a strong disinfectant.

After a thorough cleaning and removal of lacerated tissue, I brought the edges together and coaptated with silk sutures after inserting two drainage tubes; one under the lower lobe of the left lung and the other under the liver from which I ascertained there was absolute drainage. The external dressing was composed of iodoform gauze. I prescribed internally brandy, belladonna and quinin and a bland but nutritious diet.

On the third day, I found my patient restless and coughing with hematemesis and fever. Upon this I removed the dressing and washed out the abdominal and thoracic cavities with hydrozone in solution through the herein mentioned drainage tubes, and reapplied another antiseptic dressing, from which time the case made a remarkable forward progress until about the fifteenth day, when again the patient began to show some internal disturbance that on the eighteenth day proved to be an abscess on a large scale in left lower lobe of lung; this ruptured spontaneously three days later, leading to profuse purulent expectoration (undoubtedly a result of remaining shot, and small fragments of bone) breaking down the patient's vitality very much for a time which, however, was soon repaired with quinin and iron, and now the patient is absolutely cured.

I merely report this remarkably unusual case to show what can be and often is done to apparently hopeless cases.

NEW THERAPEUTICS IN HAY FEVER.

By ALEXANDER RIXA, M. D., of New York.

(Published by the *Medical Summary* of Philadelphia, Pa., for December, 1894.)

For a number of years I had the opportunity to pay particular attention to a case of hay fever of the worst kind. The case was in my own family, a brother-in-law, who is living in my house. He is forty-five years of age, weight about 220 pounds, and is a six footer. He contracted the disease about fifteen years ago, in Chicago, while attending a camp meeting of the Knights of Pythias. Since then it has appeared every year with the punctuality of good clock work, on the nineteenth of August. Early in the morning, rain or shine, the sneezing commenced with the vehemence of a volcano in full eruption, as the first symptoms of the disease. The eyes are usually swollen and suffused in the inner canthus. There is a feverish, accelerated pulse, and a rise of temperature to 101 5-10° or more. However, it is not my intention to give you the etiology, pathology, symptoms, etc., of the disease; my object is to impart to you my successful treatment.

I recollect my first experience with the case. I was called to the patient late in the night, at the period of the hay-asthma. He returned from the White Mountains where he used to spend the season, too soon, and got this attack. I found the gentleman standing at the foot of the bed holding on to the woodwork and breathing like an aggravated bellows. Having no experience in the treatment of the disease, being my first case I ordered a wash-bowl of hot water, in which I placed his hands. After a short while the intense dyspnœa was relieved, the respiration easier, so that he could sit down on the lounge. I now ordered a hot drink, hot water with brandy, almost half-and-half, still keeping his hands in the warm water. After a while I had the hot drink repeated, and in an hour he fell asleep on the lounge. The next morning he was surprised at the efficacy of my remedy, which gave him several hours of rest.

Before I visited my patient I stormed all the hand-books on the subject, and took along a vast amount of prescriptions, which were recommended by the great authors, but they all failed to help the asthma. The paroxysmal attacks returned upon the slightest change in the weather, and the asthma run its self-limited course, in spite of all my remedies. That was six years ago. Since then I experimented with the good man, who was a patient subject, with all available drugs and medicines. I cauterized his nostrils, burned it with the thermo, and galvano cautery, brushed it, washed it, pencilled it, and still the next year the hay fever returned with the same vehemence and on the same day. Certainly I gave him relief, every year more, but to stop the out-break of the disease, I succeeded but for the last two years.

My mode of treatment to prevent or abort the disease, consists of the following: Three days before the onset of the disease, I commence to wash the inner nares with a solution of Peroxide of Hydrogen (Marchand's), *one* part of hydrogen, and *two* parts of boiled water. This year I used *Hydrozone*, a new preparation, which has the double strength of the former, and is one of our best germ killers. I took *one* part of *Hydrozone* to three or four parts of water, according to the indication, three or four times a day. I use a nasal douche holding one pint of the fluid. By this process I suceeded to prevent the outset of the disease in all my cases. There is but very little irritation of the nose present which causes the patient hardly any trouble. However, for those most sensitive I have the following prescription:

℞ Acid. boracic, gr. viij.
Sol. cocaine hydrochlor, ʒ ij.
(Five per cent.)
M. Sig. Use in atomizer.

The nasal symptoms, or the hay fever, proper, has a duration, according to my observation, of about two weeks. After the expiration of this time, the hay asthma sets in, and two days later the hay bronchitis follows. Up to the past year I have not succeeded, in spite of all my efforts, to prevent this stage of the disease. Last year and this season, however, I succeeded rationally with the following remedies: My observations of former years taught me the lesson, that when this period approaches, certain branches of the bronchial tubes get clogged up with tenacious mucous, which none of our expectorants could dislodge in a hurry. I succeeded but once with a desperate dose of apomorphia to remove this obstruction and the asthma disappeared like magic. However, in a short time it re-established itself and kept tight for some ten days and sometimes to the end of the season, of course with more or less severity. Considering this pathological condition, I started in right at the time when the hay fever should appear with the administration of the following prescriptions:

℞ Iodide of ammonia, ʒ j.
Fl. ext. grindelia robusta, ʒ iv.
Fl. ext. yerba santa, ʒ iv.
Aq. q. s. ad., ʒ ij.
M. Sig. A teaspoonful four or five times a day.

For the first week, while the second week I ordered to be taken every three hours in teaspoonful doses adding yet the following medication:

℞ Terpin hydrate, ʒ j.
M. Fiat capsule No. xii. Sig. Two capsules every two to four hours.

These medications acted like a charm and prevented the asthma during the entire season. It seems to act in the way of preventing any accumulation of the discharges in the bronchial tubes and branches. The last stage of the disease, or the period of the bronchial catarrh, I have, thus far, not succeeded to avert, notwithstanding that there is no accumulation of mucous. However, as it forms the mildest part of the disease, the patient cares but little for the cough, which can easily be controlled by small doses of codeine or morphia. Stimulating drinks are beneficial. Grogs and punches as well as good wines are advisable, all through the different stages of the disease. The intestinal tract should be kept in order and late or heavy suppers prohibited. In some of my milder cases patient attended to his business during the whole period, and was not compelled to stay in the house like in former years.

PELVIC PERITONITIS WITH RESULTING ABSCESS.

By F. P. LEFFERTS, M. D., Belvidere, N. J.

Read before the New Jersey Homœopathic Medical Society, October, 1894.

(Published by *The Hahnemannian Monthly*, of Philadelphia, Pa., January, 1895.)

This case is presented not because of anything remarkable in the treatment or in the results attained, but rather that pelvic abscess in not very common; to emphasize the tediousness of such cases, and to refer to the local treatment which seemed of benefit, and to see whether any can give suggestions in the way of an improved treatment.

Mrs. X———, æt. 43, the mother of one child twenty-three years ago. Has been afflicted with endocervicitis with erosions of the os for years, for which a good deal of local treatment has been used. This inflammation of the cervical canal has resulted in thickening the body of cervix, and constriction of the external os. Has latterly had thickening of right Fallopian tube and some enlargement of right ovary.

Suffered from the first attack of pelvic peritonitis five years ago, which came on two weeks after a moderate dilatation of the cervix for the relief of the constriction of the external os. Temperature was 103° during the course of this attack, and much abdominal pain was suffered, particularly in the right iliac region. This attack, lasting four weeks ended in resolution.

Had a second attack of pelvic peritonitis two years ago, during which the symptoms were less severe and temperature more moderate, but attack was more tedious. being confined to bed six weeks and terminating in resolution, but there remained peritoneal thickening posteriorly and more fixation of the uterus than after the first attack.

The last attack, which resulted in abscess, was ushered in on November 12th last, after carriage rides on two successive days, when she was nearing her menstrual period. Had two slight chills after retiring, followed by moderate fever and some pain in back.

Moderate fever continued until afternoon of November 15th, when she was seized with a very hard and long continued chill, which was followed by a temperature of 104 1-5°. This temperature decreased in a few hours and perspiration was induced. Temperature was 101 1-5° at 3 p. m. of the 16th. The temperature ranged from 100° to 101° for several days, accompanied by swelling and tenderness of the peritonæum surrounding the uterus, and fixation of uterus. As the inflammation increased the uterus was pushed forward and formed a tumor above the pubes. The stomach was very irritable, nausea coming on during sleep, which often resulted in vomiting. She was fed on a liquid diet exclusively. There was very little pain in the abdomen. Temperature did not rise above 102½° after the 15th of November. Pus formed and fluctuation became apparent in the Douglas cul-de-sac and caused pain in lower part of the back. There was considerable enlargement of the abdomen, showing the inflammation to have extended over a large area. The accumulation of pus was so large that fluctuation was not distinct.

On December 8th, while under the influence of ether, Dr. Seibert, of Easton, evacuated the pus by an incision made as near to the rectum as possible per vagina. The discharge of pus was very profuse and offensive. All went well for a few days, when there was a rise of temperature and other symptoms indicating that the pus was not having free exit. The operation was repeated on December 13th, and the incision was made deeper and the opening made larger, when there was another profuse discharge of offensive pus. The temperature decreased after this operation. Pus discharged freely for a long while. Began using a weak solution of carbolic acid to wash out cavity of abscess daily. The effect of this seemed to be very little judging from the amount of discharge, but she grew stronger and improved in a general way. After using injections of carbolized water for a month or more, began using a 25 per cent. solution of Marchand's Peroxide of Hydrogen. This had more influence both in reducing the amount of discharge and rendering it less offensive. It was gradually used

stronger until it was used full strength. It was found more effective used in this way. The patient continued to have some fever until four months had elapsed after the operation, when she was allowed to be around her room some. Continued washing out the pus cavity once daily for nearly five months, when the discharge was so moderate that it was done only every second day, when we tried to hasten the healing by the use of Glycozone, after first cleansing the cavity with Peroxide. The discharge became more profuse while using this, consequently it was given up.

A solution of permanganate of potassium was also used for a time, but not with as satisfactory results as from the Peroxide. Recourse was again had to the Peroxide, and we began using it twice daily the latter part of May. Continued its use in full strength twice daily for the next two months with the result of a gradual decrease of discharge of pus and in the depth of pus cavity. During the latter part of July began using the injections once daily, which was continued for two months, with the result of a gradual decrease in the discharge.

Patient suffered a relapse on August 21st owing to over-exertion, but was convalescent in ten days. We have tried again to see whether an injection every second day will not be sufficient, but find that the discharge increases. The cavity seems about an inch in depth at this time and the discharge very moderate, but there are indications that it will require weeks still before the cavity will be closed. Patient's menstrual flow did not appear for three months after the beginning of the attack. For the past four months she has been able to do light housework and take short walks, and a few times has been in a carriage by driving on a walk.

A PRACTICAL THEORY AND TREATMENT OF PULMONARY TUBERCULOSIS.

(Abstract from the *Philadelphia Medical Times and Register* of January 26, 1895.)

In a lengthy paper on the above subject, which doubtless marks a new era in the study of tuberculosis, Dr. Frank S. Parsons, editor of the *Medical Times and Register* of Philadelphia, Pa., has shown that pulmonary tuberculosis is primarily due to a lymphatic stasis. That such stasis may be congenital or acquired. That the bacillus tuberculosis is to be regarded as a development, existing simply because a favorable medium is presented, in the lymphatic stasis, for its cultivation. Bacilli may exert influence on the disease as foreign bodies, similar to other foreign or waste elements, but are not primarily causative. Their mere removal will not cure the disease, except as such removal implies restoration of perfect excrementitial function and lymphatic circulation. That tuberculosis implies atrophy of the pancreatic gland in the majority of cases, and the dislike of fats by phthisical persons is the only symptom we can depend upon to show that with the pancreas may lie the origin of this disease.

In the treatment of this affection Dr. Parsons calls attention first to the catarrhal condition of the stomach, and considers that on the successful treatment of this condition lies the curability of tuberculosis; for, only by removing chronic catarrhal inflammation of the stomach and intestines may the physician hope for proper assimilation of food or medicines.

"To begin with," he says, "it will be found of advantage to insert a stomach tube and thoroughly wash out that organ, teaching the patient the art of performing this feat himself. The solution used for this lavage should be a 1 to 16 dilution of Hydrozone in warm water. I prefer the Hydrozone to the Peroxide of Hydrogen for the following reasons: It is double the strength of the latter, its taste is not objectionable, and it is more active in its therapeutic qualities. The solution should remain a few minutes and then be syphoned out through the tube."

"Hydrozone acts in two ways on the mucous membrane of the stomach chronically inflamed; first, it clears the surface of excess of mucus, combining with the pus to form carbon dioxide and nascent oxygen (both gases, and easily removed through the tube); second, the oxygen of the preparation acts directly and favorably in stimulating the mucous membrane and underlying glands, thereby favoring the circulation of the blood and the performance of function."

Second to this method, for the treatment of catarrh of the stomach in tuberculosis, is the internal administration of Hydrozone before meals. A dilution of one part to thirty-two of water may be employed in this manner: a glassful of the mixture taken half an hour before meals. If the dilution is too strong the gas generated will be distressing to the patient. On that account it will be frequently advisable to administer Hydrozone diluted one part to sixty-four of water. Glycozone (c. p. glycerine treated to fifteen times its own volume of ozone) may be used alternately with the Hydrozone as a curative agent.

Then Dr. Parsons treats of the various methods necessary to build up the body, the value of ozonized atmospheres and inhalations and the medicinal management of tuberculosis, in a practical way. Anyone not having read this article should obtain it from the publishers. It is now published in book form.

THE SUCCESSFUL TREATMENT OF RIGGS' DISEASE.

By H. E. LEWIS, M. D., of Burlington, Vt.

Published by *The Vermont Medical Monthly*, January, 1895.

A short time ago a member of my family, a gentleman of forty-five years of age, was suffering with what was believed to be Riggs' disease. There was no evidence of ulceration, no swelling and little soreness to speak of, simply a very evident loosening of the right incisors, and canine in the lower jaw.

Several dentists examined the teeth, confirmed the diagnosis, but declared that there was not much to be done except to await developments.

A solution of Hydrozone was made in the proportion of one ounce of Hydrozone to four of distilled water, and used as a wash.

The treatment commenced at 6:30 P. M., and the mouth was washed very thoroughly three times before retiring, some of the solution being retained in the mouth each time for about a minute. The escape of gas showed plainly the presence of pus though in small quantity.

In the morning there was a marked change; the teeth were much firmer, what soreness had been present had entirely disappeared, and the test for pus gave no reaction whatever.

A weaker solution (about one to twelve) was used every four hours all day, and at night just twenty hours after commencing the use of the Hydrozone, the teeth were as firm as ever and have been ever since. But in order to prevent a recurrence of the trouble a weak solution of Hydrozone (about one to twenty-four) is used every morning as a mouth wash.

From its great antiseptic qualities it is found to be an excellent wash for cleansing the mouth of every bad taste, and rendering it pure and clean.

THE PLASTER OF PARIS, WOOD, ALUMINUM, PAPER, LEATHER AND STEEL SPINAL SUPPORTS.

By A. M. PHELPS, M. D., New York.

Professor of Orthopædic Surgery in the University of the City of New York and the New York Post-Graduate Medical School and Hospital; Professor of Surgery in the University of Vermont; Surgeon to the City Hospital; President of the American Orthopædic Association.

A discussion on Dr. L. A. Sayer's paper on the history of the plaster of Paris corsets, read before the Academy of Medicine at the annual meeting, January, 1895.

(Reprint from the *New England Medical Monthly* for March, 1894.)

I am exceedingly obliged for the courtesy which has been extended to me to discuss the paper of the evening. With nearly all of the points which have been raised in this paper I fully agree. And that the plaster or Paris corset, in my opinion, is one of the best supports for Pott's disease of the spine ever devised, my experience verifies. Without it, it would be difficult for me to conduct the clinics and dispensaries of which I now have charge. While it contains many defects and demerits, its good qualities will more than over-balance the bad, because of this and because its application is based upon accurate scientific principles I give it a most hearty endorsement.

I have used the plaster of Paris corset from its very first inception. I have watched its growth from the time of its first application. I have seen it fail through bad materials and worse application. I have seen it bitterly fought against by its opponents, receiving just and unjust criticisms. I have watched its methods of application gradually re-constructed, the materials from which it is made improved, and I am free to say, after fourteen years of experience, that it is one of the best supports to be used in Pott's disease of the spine the world has ever seen. The arguments which have been urged against its use are most fallacious. That it does *not* support is argued by some of its bitter adversaries. But when a patient is suspended in Pott's disease of the spine, and a jacket properly adjusted, it is at once relieved from a condition of pain and suffering, and to such an extent that any amount of pressure upon the shoulders does not produce pain. I am convinced that something does support. If it is not the jacket, what is it? A patient is suspended in lateral curvature of the spine. A plaster corset with lacings is made to fit this suspended and straightened position. After the corset has been adjusted the patient is three inches taller than before its application. If the corset does not support, what makes him three inches taller? I have personally observed this change in many cases, and no amount of argument advanced by the opponents of the plaster of Paris corset can possibly disprove a clinical fact. One fact is worth more than a thousand theories. The first book written on steam navigation by an Englishman, in which he attempted to prove that a steamship could not cross the Atlantic ocean, was a failure, because after his book was printed, it was brought to this country by the first steamship. And so it is with this argument—the patient *is* three inches taller with the corset than he is without it. What makes him three inches taller? Support. It is true that this corset becomes filthy; vermin invade it; but it is inexpensive, and can be changed, if necessary, once a month. Much better this than the application of a steel brace, that a mother and nurse can remove at liberty, handling the child in such a manner as to produce trauma and injury to the diseased vertebra. The steel braces must be frequently removed or else excoriations will occur. They excoriate and are uncomfortable if they give support, which is one of the strongest arguments against their use in Pott's disease of the spine.

We are all agreed, I believe, that the best orthopædic machine ever devised is the human hand. Guided by an intelligence, it applies forces for the correction of deformity, more delicately and perfectly than any inanimate object ever invented. Plaster of Paris is applied to the deformity. While in the plastic state the hands mould it to the correct position, and hold it there until hard or set. Can you not see that now the plaster of Paris continues to do the work exactly as the human hand did it? In other words, plaster of Paris is effective as a brace of support only in proportion to the amount of gray cerebral matter mixed up with it. In the absence of the latter it is worthless. Proper materials must be used, else the plaster will not set rapidly. H. B. Claflin & Company make a perfect hospital crinoline, containing just the proper amount of sizing and no indigo. The White Dental Mfg. Co., of New York, puts up the plaster in tin cans, hot from the oven. These two materials make, when put together properly, a perfect bandage, that will set in five minutes. This rapid setting of the plaster is necessary, because the hand holds it to the corrected position of the deformity. This material, with the stockinet sold by Ford, completes the materials necessary to make a perfect corset. The crinoline costs 6c. a yard, the plaster of Paris 3c. a pound, and the stockinet 30c. a yard. A corset for a child six years old should weigh not to exceed one and one-quarter pounds, and for an adult two and three-quarter pounds. This makes a support as light or lighter than the steel brace, and it supports as the steel brace cannot.

What the profession wants is a proper brace, one that will apply extension and relieve pressure, and also act as an anterior-posterior support when necessary transmitting the weight of the body through the transverse and articular processes, thereby relieving the bodies of the diseased vertebra, Such a support is to be found in the plaster of Paris corset. It removes from the nurse or the mother the possibility of interfering with the dressing. By its particularly broad, even surfaces, if properly applied, it does not excoriate, and can be worn for one or two years with comfort. Springing or bending the corset anterio-posteriorly makes it an anterio-posterior support. Thus we see that it combines the good qualities of all the steel braces that have ever been devised, and one more, and that is *extension for the relief of pressure.* The corset is heavy when improperly made. It is not so porous as we are led to believe. Its thickness makes it objectionable to women. This has led me to substitute for it the wooden corset, the paper corset, made from paper such as is used in making paper boats, and the aluminum corset. These corsets combine all of the good elements of the plaster of Paris corsets, and, in addition to these, lightness, durability and thinness, which does not interfere with the clothing of women.

In clinical work and among the poor patients the plaster of Paris corset fills the gap that nothing else can possibly fill. These patients, supported by steel braces, I am informed, and I have observed almost invariably go on from bad to worse as regards deformity. They certainly do in disease above the eighth dorsal vertebra. I feel satisfied that in this class of patients the steel brace will be utterly abandoned in the very near future. They certainly should be in lateral curvature o the spine in any case. Now, in private practice, I know of no better dressing for Pott's disease than a light and thin plaster corset during the acute stage, after which the corsets that I have already mentioned, and which we use, will be found to be more comfortable and agreeable to the patients. The difficulty with leather corsets is that they fail to support, because they do not retain their shape—as a boot changes upon one's foot, so will a leather corset change upon the body. The spinal support for Pott's disease of the spine must be unyielding and firm. The paper corset first made by Vance is, in some respects, a good one; but it is not desirable; it is difficult to make and it is somewhat expensive. Since the time of Vance, other paper corsets have been made, according to different formulæ, but they are made of paper, and are, really, only modifications of Vance's idea. The corset made by Weigel, of Rochester, N. Y., from the paper used by printers in making their stereotypes, he claims, is durable and comfortable. The corsets made for me by Horace Waters & Co., of Troy, N. Y., after the paper boat

formula, have proved most satisfactory; but it is more bother to get them than I care to endure. Other corsets made in this city, similar to that made by Vance, are open to the same criticisms as those mentioned. The Jurymast and corset, when adjusted so as not to lift the head, but to draw it backwards, so as to transmit the weight of the head through the transverse and articular processes, makes the most efficient dressing that I know anything of, and particularly so in upper dorsal and cervical disease. So far as I have observed the deformity does not increase, as is the case with a steel apparatus, in diseases of the upper dorsal.

Dr. Sayre has accomplished much by his constant and indefatigable hammering at the profession towards introducing the idea of partial suspension and fixation in Pott's disease of the spine, but the idea of partial suspension and fixation in Pott's disease of the spine carries us back almost to the traditions of medicine. Ambrose Pare, in 1579, used a fixation apparatus, made from steel, which is almost identical with the aluminum corset which I am using.

In 1696, Von Nuck made a suspended apparatus which has been in almost constant use in Europe since that time. It is very similar to that used to-day, bearing the name of the distinguished author of the paper of the evening. In 1700, Heister devised an anterio-posterior support, which, in principle, is the same as Taylor's brace used to-day. It has been in use in England since that date. In 1754, Hauermann made a modification of Von Nuck's suspension apparatus, which seems, however, to be more a change of material than principle. In 1764, Levacher devised the Jurymast, which was attached to a corset made of steel and canvas, and was used precisely as the Jurymast is used to-day. Portal, in 1772, slightly modified the Jurymast, but attached it to a corset in the same manner. In 1825, De La Croix still further modified it by adding the chin piece. Heine, in 1832, still further modified Levacher's Jurymast by adding a chin piece and attaching it to a steel hip-band corset. These Jurymast suspensions, taken together with the description of its use, are identical with those in use at the present time. About the only thing that this generation can claim in regard to spinal supporting is in the change of materials, using the principles laid down in the last century and the beginning of the present. They have been in constant use since then, and also the principles, as exemplified here to-night. I believe them to be correct.

I offer the aluminum corset, not as a substitute for many of the braces and corsets now worn in the acute forms of Pott's disease and lateral curvature; I suggest it, rather, to take the place of such braces in cases requiring permanent bracing, or in individuals who are desirous of securing a support at any time which combines durability with lightness and comfort. So soon as a case of lateral curvature has been arrested, or the greatest amount of benefit has been derived from treatment, the aluminum corset will then be found a most agreeable, permanent support. The aluminum corset has these qualities to recommend it to the patient:

1. Lightness.
2. Durability.
3. It is thin and does not interfere with the form and clothing.
4. Being extensively perforated makes it the coolest and most agreeable of supports.
5. The patient can wear it during bathing.

An ordinary corset weighs from one to two pounds, depending upon the size. To prevent cracking and to protect it from perspiration, it is covered with a waterproof enamel, which is applied by heat.

The steps of its construction: Make a plaster form of the body; send this form to the foundry and have a cast iron anvil made; polish this, and then at a certain temperature the workmen will bend on to it two sheets of aluminum representing the two lateral halves. The frequent heating and hammering together with the cylindrical shape makes the corset almost as strong as steel. The two halves are hinged in the back and closed with automatic clasps in front, which stop at any notch to accommodate itself to the body before and after eating. This corset completes my armamentarium in cases requiring spinal supports, viz.:

1. Plaster of Paris corsets for acute Pott's disease.
2. The Wood corset for lateral curvature, and cured or convalescent cases of Pott's disease.
3. The Beely corset for mild forms of lateral curvature, particularly in girls.
4. The aluminum corset for permanent bracing; and, lastly,
5. The celluloid corset, which, in a way, takes the place of the aluminum.

I visited Dr. Waltuck, of Odessa, Russia, in 1888, and from him personally I learned the details of making the Wood corset, after several days of hard work. I found that Professor Lorenze, of Vienna, has been using the corset for some time and was much pleased with it. At that time, however, many of the corsets proved to be inefficient on account of errors in their construction. We have used the corset constantly since that time, and with the modifications which we have made, it is one of the most efficient, comfortable and suitable braces that I know of.

It has been with the greatest difficulty that we have succeeded in getting the proper materials for constructing the corset, and even now it is cheaper and better to import the wood from Vienna. The spruce timber which grows there makes a better shaving than any timber that we have attempted to use which grows in America. It is tougher and works better with the glue.

An impression is made of the body with plaster bandages. This mould is filled with plaster of Paris, which makes a perfect cast of the body. The corset is now made over this cast. The cast is changed somewhat in shape to make the form even straighter than the body in the suspended position.

Corsets made according to the method followed at the time I observed the process, were not as perfect as they should be. The slightest excess of glue moistened by the perspiration of the body coming in contact with the shirt or the skin, was exceedingly disagreeable. The perforations in this corset weakened it, and allowed the glue to exude during perspiration.

To obviate all this I had the corset perforated, in which perforations eyelets were punched. A special machine facilitates the perforating and the punching of the eyelets. The lacings are stitched on. Trim the top and bottom with kid. The entire corset is shellaced inside and outside with two or three coats of shellac, which render it impervious to moisture, the eyelets ventilating it perfectly. The improvements which I have made in the corset consist in shellacing it on the inside and outside and putting in the eyelet holes and eyelets, which add to the strength of the corset and ventilate it perfectly.

An ordinary corset for an adult weighs from one to one and one-half pounds. They are very durable, very comfortable to wear, and thus far I believe that they are the best spinal braces yet devised.

I will add, by way of parenthesis, that the corsets, when completed, can be covered with silk or with stockinet, or they can be left in the linen finish.

A word or two in regard to abscesses occurring in Pott's disease of the spine. The orthopædist is inclined to trust them to nature, as he does in abscesses of joints. Pus living in contact with the diseased vertebra destroys them, and what was at first a small focus of disease, in a few weeks by this macerating process becomes an extensive disease, involving frequently the entire body of the vertebra.

We *never aspirate such abscesses.* So soon as they are detected they are at once incised and thoroughly irrigated with a solution of bi-chloride of mercury, 1 to 2,000, after which they are washed thoroughly with Hydrozone until foaming ceases. They are then either packed with gauze saturated with iodoform, ʒ ss, glycerin, ʒ iv. Small foci of diseases are curetted. Abscesses appearing at Poupart's ligament are incised and treated the same as other abscesses, only a half-inch drainage tube is passed up to the seat of disease on the end of a strong probe. This is the sewer through which pus can discharge and not burrow through the tissues. All abscesses should be opened, excepting when something communicates, *then open them.*

RATIONAL THERAPEUTICS OF CHOLERA INFANTUM.

By GUSTAVUS BLECH, M. D., St. Louis.

Published by *The New York Medical Journal*, March 2, 1895.

No strict rules can be given for the treatment of disease. It is for this reason that so many physicians say we do not treat a disease, but we treat an individual. True enough, we treat the individual, but what we have most of all to consider is the disease. The individual will dictate us alterations and modifications in our treatment.

A general plan of treatment may be outlined, however, and I will try to do so in regard to one of the most fatal diseases of babyhood—cholera infantum.

There is a certain philosophy in therapeutics which I would frame in the three following rules: First, remove if possible the disturbing causes; second, treat symptoms which *per se* are liable to endanger the life of the patient; and third, sustain vitality.

As said before, the therapeutics, which is based upon the ætiology and pathology of a given case, is the only one to be employed.

Now, the ætiology of cholera infantum is not so obscure as asserted by a good many authors. Whether or not of microbic origin, one thing is sure—it is due to a chemical decomposition of food, causing an inflammatory condition of the digestive and alimentary canal.

Clinical experience, furthermore, shows that this disease is of a grave character, producing death in a large proportion. Heat *per se* is not the immediate cause of this disease, but it influences its course considerably. Therefore, gastric or intestinal disturbances in summer demand a closer attention than those which occur during the colder season. Cholera infantum is a disease met even in the palaces of the rich, although not so often as in the tenement houses of the poor, which fact proves again that bad air, filth, and lack of ventilation are also of a predisposing influence, as well as an obstacle to a quick cure. The mortality in the tenement houses is larger than that of the richer parts.

If we consider the aforesaid, we shall first of all, as regards the treatment of this disease, have to restrict diet.

As soon as called to a case of cholera infantum, prohibit for the first day any food whatever. Mothers have no right to nurse the little patient either. Strict instructions must be given in that direction, because the timid mothers are often inclined to quiet the crying babies by putting them to the breast.

Remedies are of very little value. Beginning with calomel, salol, and all the newer antiseptics, finishing with subnitrate of bismuth—they have all proved a failure, for none of them work quickly enough.

The treatment as outlined by Dr. Elmer Lee, of Chicago, in his cases of typhoid fever, proved a success in my hands during last summer, and under this treatment I have lost only one patient out of twenty-three, while the monuments of my skill exercised during the year 1893 are decorating the cemeteries of the State of Connecticut.

So far as I knew, the best antiseptic (which has also a strong tendency to reduce local inflammation) was peroxide of hydrogen (medicinal) until hydrozone was used by me. Hydrozone being twice as strong as Marchand's peroxide of hydrogen (for economical reasons), the latter drug is preferred by me. This remedy can be administered internally as well as externally.

I add a tablespoonful of hydrozone to a pint of water for washing out the stomach. The vomiting ceases after the first washing as a rule. If necessary, this procedure can be repeated. If the vital power of the little patient is not too low it can produce no harm. But in every case, no matter how far advanced, I do not omit an irrigation of the bowels, for which purpose I use a soft rubber catheter attached to a common bulb syringe. The catheter is introduced as high in the colon as possible. It is unneces-

sary to say that the water must first be sterilized. I do not agree with Dr. Lee in using hot soap water. On the contrary, I use cold water, and add to each quart about two ounces of hydrozone. The improvement after the first or second irrigation is marked. If necessary, these irrigations can be repeated every two hours.

Among other remedies there are only two to be employed, morphine and strychnine. Both ought to be administered hypodermically. Their indication is too well known and they are about all we need. No antipyretics should be given. If the fever is very high and if the irrigation of the bowels does not reduce it, the whole body should be washed with alcohol.

The diet for the next twenty-four hours should be very light indeed. Sweet, strong Russian tea is all I allow.

Each individual case will teach us when food can be allowed again.

Since the adoption of this mode of treatment I have met with the most remarkable success, and no honest practitioner should refuse it a trial.

11 N. Broadway.

A GLANCE AT THE MANAGEMENT OF CAPILLARY BRONCHITIS IN INFANTS.

By DOUGLAS H. STEWART, M. D., New York.

Physician to Harlem Dispensary.

Published by *Times and Register*, of Philadelphia, Pa., Feb. 17, 1894.

The treatment has for many years been emetics, ammon. carbonat. and ammon. chlor. Of the emetics, syrup of ipecac is time-honored, and deservedly so; but have you never ordered this valuable remedy and on returning found your patient worse, and not a sign of vomiting? My experience of this preparation as made or kept in the average apothecary shop is far from comforting, one-half a teaspoonful of one sample, acting as an emetic, while a teaspoonful of another only made the little child nauseated and depressed.

It has seemed wise to me not to tell the nurse what I was giving at all, but to order syr. ipecac, two ounces, a teaspoonful to be given every twenty minutes until vomiting or purging, then stop; and I have generally gone back to smiling faces, instead of solemn remarks about the medicine not acting. Whatever is given in excess of the requirements will be either vomited or purged.

Children under three years of age do not expectorate, but we often notice quite an amount of mucus or muco-pus unloaded from the bowels. The mother will often make an anxious complaint that the child does not "raise anything," but a prompt statement that little children never do, and an exhibition of the slimy passages contained in the diaper, will go far to reassure her both as to her fears and your knowledge of the case.

The ammonium compounds I have discarded—as the only real effect I could ever find from them in the acute stage was that they made my patient sick "at the stomach." Of course, I am a heretic, and deserve boiling in oil for such a statement, when all the prominent physicians of the early part of this century set the seal of approval on the chloride and carbonate—still, this is a clinical paper, and I can only give the results of experience, and not of a diffusible, stimulant, expectorant theory, and, after using them till you have lost many cases, face about and give one teaspoonful every hour of the liq. potassa citratis or mist. pot. citratis—a simple refrigerant diuretic—agreeable to child, lowering the temperature and having a most soothing effect on any acute inflammation.

Let the expectorants alone. They only increase the activity and congestion of the mucous membrane.

Externally, if the patient is strong, flaxseed poultices; if weak, no poulticing at all —but turpentine "liniment" rubbed in thoroughly every three hours, from the chin to the pubes in front and from neck to coccyx behind.

My patients have all their clothing removed; the bandage generally worn since birth, especially. Have the abdomen free—this is the first commandment. Then a loose cotton or muslin night gown put on, and over this a blanket—all very loose—pinned at the neck and down the front, if necessary, with large safety pins. Don't put the patient next the blanket; some skins will not stand wool next them.

The sick room should be kept at seventy-five degrees—a thermometer is indispensable. On a stove, or over an alcohol flame, boiling water, and into the kettle a teaspoonful of turpentine poured on the steaming water every hour, so that the case is constantly in an atmosphere of steam and the steam carries minute particles of turpentine.

Should a case prove a bad one, or not making the progress I could wish, the blanket is opened and handkerchiefs wet with dilute alcohol or whisky, are spread over the chest and abdomen every fifteen minutes.

The parents will not permit cold water packing, because they fear the child will "take cold." Alcohol or whisky is quite a different thing in their eyes from water, and they know that heat destroys the strength and virtue of spirits, and they approve of spirits, externally at least, if not in every other way; therefore they will usually gladly second cold liquor compresses.

Keep up the packing until you find a very decided improvement—as you will if it is not too late. An improvement in breathing, in cyanosis and dyspnea, and a fall of from one-half to one degree in rectal temperature.

Then rub the child well with dry towels and replace blanket and gown.

Should any signs of collapse appear, dry heat or a hot bag will offset them.

The alcohol or whisky acts in four ways. First, some is absorbed by skin, and breathed in as a vapor. This stimulates. Second, the reaction from the cold brings the blood to the surface and away from the lungs. This relieves congestion. Third, the cold stimulates the heart and makes the patient take deeper inspirations. Fourth, it lowers the temperature.

After this I give from ten to twenty minims hourly of peroxide of hydrogen in the following non-oxidizable mixture: *

℞ Marchand's sol. Hydrogen Peroxide, ʒ v–x according to age.
Glycerine ℥ j.
Aq. q. s. ad. ℥ iv.
M. Sig. One teaspoonful every hour as directed.

This is supposed to supply some of the lacking oxygen to the blood and it does seem, from its effect, as if the stomach did take it up.

It will be noticed that I have written "Marchand's Solution"—well, if your have used any other kind for this purpose, I am sure you don't need my arguments to convince you that you were disappointed. Also please remark that there is nothing to spoil the peroxide in the above mixture.

In conclusion watch the urine carefully, especially look out for suppression. You will scarcely find it when giving potassium citratis—otherwise you may, and when you relieve the suppressed urine you will often relieve the dyspnea.

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* A mixture of glycerine with Peroxide of Hydrogen will not keep for more than three days. Consequently, it must be made fresh every three days.

See article headed "The Therapeutics of Glycozone" by Dr. Cyrus Edson, page 11.

After the fever is nearly or quite gone and the cough only is left, I generally start my expectorants, and have found the following commonplace mixture served me well—combined with our standby oleum morrhuæ emulsion q. s. ad. lib.

℞ Ammon. Carb., gr. xx.
Vin, Ipecac, ʒ j,
Syr. Senegæ, ʒ iv.
Glycerini. ʒ iv.
Vini Xerici, ʒ iv.
Syr. Tolu, ʒ j.
Aq., q. s. ad., ʒ iv.

M. Sig. A teaspoonful every two or three hours until cough is relieved.

℞ Syr. Hypophos. Co., ʒ ij.
Syr. Calc. Lactophos., ʒ ij.

M. Sig. A teaspoonful four times a day until relieved.

NOTES ON THE TREATMENT OF DIPHTHERIA.

Read before the Orleans Parish Medical Society, January 13, 1894.

By. ARTHUR WEBER, M. D., New Orleans, La.

(Reprinted from the *New Orleans Medical and Surgical Journal*, February, 1894.)

This brief report of the following eighteen cases of diphtheria may be of some interest on account of the treatment adopted in each being almost identical. The majority of them occurred in poor and ignorant families whose sanitary surroundings were abominable. A few of the parents were hardly endowed with sufficient intelligence to properly carry out the instructions of the attending physician. These cases were the longest under treatment.

Having had a belief that diphtheria was a local disease, with constitutional symptoms produced by the absorption of toxic material, it has been my aim to combat it at the point of infection, and by destroying the nest of the bacilli to remove the source of the poison.

This theory has, to my mind, been proven in the success attending these cases. For as soon as there was an improvement in the local development of the disease there was a corresponding improvement of constitutional symptoms. By this I do not mean to say that we should depend entirely on local treatment, for no cases ever come under our care where the effect of the absorption of the poisonous tox-albumen is not noticeable, and it is necessary to adopt some general plan of treatment to destroy the effect of this effete material in the blood.

The following is the treatment adhered to in all cases coming under my attention. The throat is sprayed every twenty minutes during the day and every hour at night with pure Peroxide of Hydrogen (Marchand's) until the membrane has disappeared. After the removal of the membrane has taken place the spray is continued every two or three hours for several days, when the patient is discharged. Whenever the pure peroxide causes too great irritation of the throat it should be diluted with water and slightly alkalinized. One to three is about the weakest solution I have found useful.

At each sitting it is necessary that the parts involved should be well attended to; never introduce the nozzle only two or three times, but continue it for a minute or two, permitting the child to breathe after each application. Under such treatment you will be gratified to find the membrane dissolve, and often come off in pieces.

For systematic treatment at the commencement one-twentieth grain doses of calomel, combined with a grain of bicarbonate of soda, is given until there is an increase in

the salivary secretion and production of four or five characteristic calomel stools, which usually takes place in twenty-four to forty-eight hours. The following prescription, a teaspoonful every two or three hours, is given after the action of the calomel.

℞ Tinct. ferri chloride, ʒ iss.
Glycerine, ʒ iv.
Aq., ℥ ij.

If at any time during the attack there is any indication of heart failure, very small doses of strychnia and digitalis are given.

For food, brandy, milk, milk toddies, egg-nog, white of egg beaten up in water, the juice of meat broiled very rare, cocoa and Ducro's elixir are ordered at regular intervals,

The results of the above treatment can be seen in the following eighteen cases:

1. Ada W., 3 years; membrane disappeared in five days; under treatment twelve days; recovered,

2. Edna D., 2 years; recovered in twenty days; membrane disappeared on fifth and reappeared on the eighth day. Slight paralysis.

3. Ralph E. D., 2 years; recovered; membrane lasted seven days.

4 and 5. Mrs. R. E. D., and baby, recovered; membrane three days.

6. Annie E. W., 6 years; recovered nineteen days; membrane in throat and nose; a very severe case; followed by paralysis of palate.

7. Mary W., 9 years; recovered in twenty days; membrane twelve days; paralysis of palate.

8. Tillie M., 10 years; died on the ninth day; there was sloughing of the palate. The child was given a glass of cold beer and died thirty minutes after.

9. Alfred M., 3 years; recovered twenty-five days.

10. Henry M., 1 year; recovered twenty-two days.

11. Bertha W., 8 years; recovered twelve days, paralysis of palate.

12. Baby W., 1 year; recovered six days.

13. William W., 3 years; recovered twelve days; membrane seven days.

14. Thomas W., 5 years; recovered fourteen days; membrane six days.

15. Lizzie S., 7 years; recovered ten days; membrane four days.

16. Louis M., 6 years; recovered thirty-two days; thrice the membrane disappeared; paralysis of palate.

17. Daniel R., 5 years; recovered seventeen days.

18. Charles H., 3 years; recovered eight days.

In none of the patients, with the exception of case 8th, did the temperature rise above 103° nor last longer than five days. In case 8th the temperature rose to 106°. There was gangrene of the throat at the first visit; sloughing of the uvula and parts of the palate occurred on the fourth day.

Cases 7th, 8th, 9th, 10th, 11th and 13th were covered with a diffuse erythema, which I at once thought was measles.

SCARLET FEVER.

By A. G. CALDWELL, M. D., of Ballardville, Ky.

(Published by the *Louisville Medical Monthly*, May, 1895.)

During the spring and summer of 1894, I treated twenty-nine cases of scarlet fever, without a death or a serious sequela. These cases ranged in severity from mild to malignant.

Treatment: For the mild cases I gave a simple fever mixture; kept the bowels and kidneys active and anointed the entire body with "sweet oil," three times a day, to

allay itching, and to prevent drying up and diffusion of scales. Kept patient on a light diet.

When the fever arose above 103° I put patient in bath of temperature 100°, and gradually reduced water to 75°. This promptly brought down the fever, quieted nervous symptoms, and refreshing sleep followed; anointed the entire body three times a day with carbolized sweet oil; this allays the intense itching, prevents scales from drying up, and reduces the danger of contagion to a great extent; gave whiskey and strychnia to support the heart; cascara sagrada to keep the bowels open; infusion of digitalis leaves and acetate of potash to keep kidneys active and prevent nephritis. Kept the patient on exclusive milk diet, and during convalescence gave elix. gentian and tincture chloride iron. For throat and nasal passages, sprayed three times a day with Peroxide of Hydrogen (Marchand's).

CHOLERA INFANTUM.

By I. N. LOVE, M. D., St. Louis.

(Published by *The Medical Mirror*, June, 1895.)

It is well for us to remember that every case of cholera infantum has prior to the initiation of serious and dangerous symptoms, a history of one or more days of general indigestion, manifested by diarrhœa and sometimes occasional vomiting. We should emphasize in the most positive way upon the minds of mothers the importance of giving attention to these primary deviations from good digestion to the babe. After the advanced state or definite state of cholera infantum has arrived, the conditions are desperate and often but little can be done.

To be brief, the best way to cure cholera infantum is to prevent it or check it in the first stage. Given an artificially fed child with a considerable degree of summer heat and the chances of fermentative changes occurring in utensils for feeding or the food supply, we have the conditions favorable to the development of cholera infantum. If the child be teething, its nervous system on edge, as it were, all sorts of reflex disturbances present in consequence, the conditions are doubly favorable for the disease.

It goes without saying that the gums cannot safely be ignored. While we have escaped from the old time slavish thought that every deviation from health in the teething child was due to the teething yet we should not go to the extreme of ignoring the thought which is the correct one that an erupting tooth renders the child more susceptible to all kinds and conditions of disease, particularly those connected with the digestive tract. The condition of the tongue as expressive of the state of the stomach should be grasped.

Every evacuation from the bowels should be carefully scrutinized with a view to the determining of the condition of the alimentary canal.

All the newer remedies may pass before us in review but we can find among them none that will equal the old time calomel in very small doses. Prolonged trituration of calomel unquestionably emphasizes its effect. The twentieth of a grain together with one grain of the bicarbonate of soda, is usually sufficient, and this should be given as often as once in two hours on the first appearance of indigestion whether diarrhœa be present or not. Frequent vomiting with marked evidence of a fermentative stomach can be relieved more promptly by washing out of the same than in any other way. The use of a large size male catheter attached to a fountain syringe, using a pint of water preferably at the temperature of the body, to which has been added four tablespoonfuls of hydrozone. I have repeatedly found after this procedure nothing further required to calm the riotous stomach. A diarrhœa accompanied by much tenesmus, great frequency in evacuation, small unsatisfactory stools mingled with mucus and blood can be relieved in a very satisfactory manner by the flushing out of the bowel. The large

size, soft rubber catheter referred to above, is ample. A pint to a pint and a half of water, the temperature dependent upon the temperature of the child. If there be a very pronounced fever present, cool water may be very satisfactorily used. I find a pint to a pint and a half usually sufficient and add thereto about two ounces or four table spoonfuls of hydrozone.

It is my custom to introduce the catheter about two-thirds of its length into the bowel and in this connection permit me to suggest that every household syringe should have accompanying it a large soft rubber male catheter for use in the enema. The hard rubber nozzle on the end of the average syringe is harsh and unsatisfactory. It does not reach in many instances, on account of the timidity of the mother and the difficutly of its introduction, beyond the sphincter and this accounts for the frequent failures in giving injections into the bowels. The soft rubber catheter referred to, can be introduced much more readily, can do no harm and from its length the fluid can be introduced high up in a manner to give satisfaction. The injections described above, of pure water (and I prefer distilled water for this purpose whether washing out the bowels or the stomach. The Crystal Water Co., of St. Louis, furnishes a double distilled water which is now in general use in this city and this is especially acceptable) with the addition of one or two ounces of Hydrozone to each pint, I have repeatedly found after such washing out of the bowel a complete rest from frequently repeated or straining actions, the patient often going the entire night without being disturbed by a movement from the bowels.

ACUTE GLOSSITIS.

By MORTIMER H. BROWN, M. D., Holcomb, Ill.

(Published by *The Alkaloidal Clinic*, of Chicago, Ill., July, 1895.)

May 26th I was called to see W. B., German, aged 50—worker among sheep—with the following history: General health good except that last winter he had several boils; does not drink or use tobacco to any extent. On the 24th day of May he noticed a small pimple on the left side of his tongue; on the 25th he had a violent headache, a profuse sweat and pain and dryness in the throat and tongue—pimple slightly larger and painful. Towards evening he placed a small piece of alum on his tongue and went to bed. In the morning, the 26th, his wife noticed that he could not speak and that his tongue was greatly swollen and protruded from his mouth interfering with respiration.

I was at once summoned and found his tongue filling his mouth and protruding about two inches out of it, of a dark purple color, very offensive odor, glands about the jaw and neck swollen, and his temperature 104, with profuse sweats and chills. As the dyspnea was increasing rapidly, I at once made a free incision into the tongue and let out about six ounces of very dark blood, and started the following treatment: Ice bags to neck and throat, pieces of ice on tongue and a spray of Marchand's Peroxide of Hydrogen medicinal every half hour, with veratrine for the fever. At my evening visit the tongue was about the same, temperature 102, sweats and chills worse. I thought, after obtaining the above history, that there was probably infection from the sheep and so adopted means to prevent general septicemia from absorption, giving calcium sulphide in full doses with tincture of chloride of iron—ten drops in a teaspoonful of glycerine every four hours—with alcohol baths and veratrine for the fever. On the 27th there was marked improvement; tongue was less swollen, temperature 99, glands not so large and he could speak some. He complained of the left side of the tongue; had an ulcer on it the size of a bean. I scraped it and dressed it antiseptically every half hour. On the following day his temperature was 103, with some sweats and chills and same headache

with diarrhea, but the next day the above symptoms had left him and he was better in all respects. On the 30th improvement still continued. The ulcer was healing, the glands were not so large but still very tender. Up to this time he was fed through a rubber catheter attached to a funnel, but on the following day he could take food naturally. The tongue rapidly returned to its natural size, the ulcer granulated over, the glands increased in size and the tenderness was relieved by a fifty per cent. iodine cerate with iodide of lime internally, and on June 4th he was discharged.

What do you think caused the rapid swelling of the tongue? Was it the alum or is there a disease among sheep of that nature? He has worked among from ten to fifteen thousand sheep annually for several years. I think the calcium sulphide prevented general suppuration as he was on a fair road to septicemia.

POISON IVY.

By R. M. CLARK, M. D., of Ada, Ottawa Co., Kas.

(Published by the *Medical Arena*, of Kansas City, Mo., August, 1895).

A boy, ——— Woods, æt. 12 years, had been fishing along the banks of a small stream in May, and became severely poisoned about the head and face. When brought to me for treatment, a couple of days later, the case presented the following symptoms.

Head and face covered with large vesicles which broke and oozed a watery and, in some places, as around the eyes and ears, a yellowish muco-purulent substance. The left side of the head and face had been the worst poisoned and the eye of that side was swollen completely shut and highly inflamed. The nose discharged a yellow, offensive matter and the pain and itching about the head and face was intense. In her anxiety to relieve the boy's suffering the mother had made an application of moist baking soda, which, from its strong caustic properties of course, only increased the itching and aggravated the matter.

I had in previous years treated other members of this family and knew them to be highly susceptible to the influence of poison ivy (rhus radicans) so much so that one became poisoned a distance of 200 feet, while passing timber in the spring, with the wind blowing from the woods. On learning this circumstance I had cautioned the parents and warned them not to allow their children around the woods, especially in spring time, when the sap flows most freely in the vine and the poison is easiest of communication. The caution had not been heeded.

Treatment: I bathed the face with Marchand's medicinal Peroxide of Hydrogen diluted with three parts of warm water, until the itching had almost subsided and the alkaline application was thoroughly removed; then I carefully sprayed the nostrils, removing considerable yellowish, offensive matter and instilled a few drops of atropine in the congested eye. I gave the mother a half-pound bottle of the medicinal peroxide (Marchand's) with instructions to bathe her boy's head and face every hour with a solution prepared three parts of warm water to one part $H_2 O_2$ (medicinal) and internally I ordered given every hour, five or six drops of sanguinaria 3x. The result was a complete cure in two days.

I am of the opinion that the small percentage of acid necessary to prevent decomposure of the hydrogen peroxide (Marchand) was sufficient to neutralize the caustic effects of the alkaline application and materially aided in the cure.

TREATMENT OF ASIATIC CHOLERA.

By ELMER LEE, A. M., M. D., Ph. B., New York.

Read in the Section on Practice of Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

(Reprinted from the *Journal of the American Medical Association*, June 22, 1895.)

Spasmodic cholera—called also malignant, epidemic, Asiatic, Indian, blue, and pestilential cholera—is generally epidemic, though not contagious. The first symptoms are generally experienced during the night, sometimes beginning with a light general uneasiness and moderate diarrhea; at other times the symptoms come on violently and follow each other rapidly. In fatal cases death usually occurs at some period between six and twenty-four hours; in a few fatal cases the patient lingers two or three days. The ordinary course of symptoms are more or less diarrhea; the discharges at first feculent, but soon presenting the appearance of rice-water or gruel; there are flying pains, or sense of coldness in the abdomen, as if purgative medicine were about to operate; the countenance is pale; there is nausea, vomiting, prostration of muscular power and nervous agitation; cramps in the legs, arms, loins and abdominal muscles, more or less severe; small, weak pulse, intense thirst, and urgent desire for cold water; in most cases cold, clammy skin; all these symptoms may appear successively or almost simultaneously. In some cases the premonitory symptoms exist for eight or ten days; and sometimes the patient is prostrated at once. When the disease comes on suddenly the cramps usually begin in the fingers and toes, rapidly extending to the trunk; the eyes are sunken and surrounded by a dark circle; there is vomiting and purging of white matters mixed with flocculi; the features are sharp and contracted; the expression of the countenance wild and confused. The face, extremities, and often the whole surface of the body manifest a varying intensity of a leaden, bluish or purplish hue; the extremities sunken, the nails blue, the pulse thready or wholly imperceptible at the wrist, arm, axilla, temple or neck; there is great restlessness, incessant jactitation, severe pain in the epigastrium, loud moaning or groaning, difficult and oppressed breathing; difficult inspiration, with short and convulsive expiration; voice hoarse, whispering, or nearly suppressed and plaintive; the tongue is white, cold and flabby, and the external temperature often sinks below 80 degrees; convulsions recur at short intervals, or a constant tremor exists; The secretions of bile, saliva, tears and urine are entirely suppressed, and a cadaverous odor exhales from the body. The patient retains his faculties to the last.

Some of the symptoms may be disproportionately severe, or may be entirely absent. Those usually regarded as pathognomonic are: watery dejections, blue appearance of the countenance of surface, thirst, coldness of the tongue, and pulselessness at the wrist.

The foregoing description of the symptoms of cholera is indicative of the nature of the disease calling for human aid. The time in which to treat the patient sick with cholera is exceedingly limited. What is to be done must be executed with rapidity. There is not a moment to lose between the time when the patient is first seen and the accomplishment of severely practical efforts. Many wise theories may be promulgated, but there are few practical measures that will avail against Asiatic cholera. The experiences during the cholera epidemic of 1892 in Europe, both in Russia and Germany, produced in me a profound conviction that, for the most part, remedial agencies that have been used are of questionable utility. Nearly every prominent remedy proposed and tried has been found to end in greater or less disappointment. Years ago, great reliance was placed upon the far-famed "mild chlorid of mercury." Twenty and ten years ago this remedy was given in large doses. Three years ago, during the latest epidemic, small doses prevailed. Next to this, the synthetic drug salol, the product of the laboratory of the Imperial Institute of Experimental Medicine in St. Petersburg,

was the most widely used and the most favorably received. Professor Nenski, the originator of salol, personally informed me that the value of the drug could not be seriously recommended as of much importance, but that it perhaps answered the requirements as far as any drug could answer, in the hands of his colleagues. Widely circulated and various reports, enthusiastically commending and moderately commending this remedy were received by the Professor in St. Petersburg, but he himself was silent as to its efficacy. The far-famed and seemingly unmatched drug, quinin, has been used, and has been held as a dazzling gem before the eyes of the profession by some of our best men, who believe that cholera is analogous to malarial disorders, and consequently the medicine which occupies the position of keystone in the arch, for malarial treatment, is a remedy suitable to contend with the rapid and desperate symptoms of Asiatic cholera. Quinin has a stout advocate in our own country, in the person of a well-known professor in one of the Ohio medical colleges. It was not used, to my knowledge, in the treatment of cholera during the last epidemic in Europe.

A remedy was brought to Hamburg during the latter part of the epidemic of 1892 by the representative of an English syndicate, who posed as a chemist, not a physician. His remedy was a preparation of iodin, to be administered through the mouth. He called the medicine a periodate, and made some experiments upon patients in one of the cholera hospitals in Hamburg. His remedy, however, was not favorably entertained by the medical authorities in charge of the cholera patients, and whatever claims were reported came through the interest of a friendly correspondent of one of the Hamburg weekly secular papers. To show how misleading some of our supposedly authentic information often is, it is only necessary for me to refer to the report given in the "Year Book of Medical Progress," published in Philadelphia. Of all the progress made, of all the combined investigations during the entire epidemic of cholera throughout Europe in 1892, and there was an immense amount of original investigation and great effort made to discover a remedy, the curious spectacle in the Year Book, which alone refers to the remedies brought by an agent of a syndicate from London to Hamburg, at the closing of the epidemic of cholera, shows that there are some things in our profoundest medical publications that are to be taken *cum grano salis.* Uretin was extensively used hypodermically for its alleged influence upon the secretions of the kidneys, upon the ground that the kidneys were to be aided by irritating them to greater functional activity to eliminate morbid elements through the urine. The result of many investigations recorded in Russian practice show that this drug is not to be commended. Digitalis was used, supposedly to benefit a weak heart. This remedy, if at all useful, could be little more than palliative. The use of acidulated water was extensively employed in different hospitals in Europe as a drink, but not prescribed as a remedy. The water was acidulated with HCl and H_2SO_4. Subcutaneous injections of salt water were made. The pro[illegible]tion of salt was one-half of 1 per cent., and the amount of salt water injected subcuta[illegible]as sometimes as much as a quart at a single injection. In one instance, during [illegible]of several days, as much as thirteen quarts were subcutaneously injected into th[illegible]tissue, principally that of the abdominal wall. This process of subcutaneous inje[illegible]was known as hypodermaclysis. The purpose of the hypodermaclysis was to maintain the volume of the blood. The diminished volume of the blood is directly the result of the waste of its liquid portion or serum into the alimentary canal. In this serous discharge, flakes of intestinal mucous gave the name of "rice-water discharges" to the bowel evacuations, the particles having a resemblance to grains of rice. The general inflammatory state of the intestinal mucous membrane, throughout its entirety, drains the blood of its liquid portion rapidly, and collapse due to stagnation of circulation quickly ensues.

The remedies mentioned are only a portion of those tried; but there is no living advocate who to-day can point with unerring certainty to one single organic or inorganic substance, howsoever administered, that can be safely depended upon in the treatment of Asiatic cholera. Both botany and mineralogy have been searched in vain for a cure for this disease.

The cause of this disease is perhaps accurately stated to be due to invasion of the blood and, secondarily, of all the tissues of the living organism, by toxines or ptomaines, which originate in the upper portion of the small intestine at the early stages of cholera. These products of organic activity, whether of animal or vegetable organisms it is here unnecessary to debate; but these noxious products enter the circulation through the villi of the intestine and rapidly and desperately poison the blood. It is clearly proved that the disease is the result of general blood poisoning from an intestinal origin. Whatever the chemic nature of the poison may ultimately be found to be, may be safely left to the bacteriological laboratory. The practical and intensely important part that remains for physicians seeking to cure patients in times of this disease is to realize how much, as well as how little, it is within human power to do. The human organism is prostrated by a fierce and deadly poison. This poison is in the blood and in the cells of the tissues, and its work of destruction is quickly and effectually accomplished. Reflectively, to say nothing of experimental research, it would seem to me that the rational and only course that could be advocated with scientific assurance of relief is to, as far as possible, literally cause to be removed these products which are death-dealing to the body in which they happen to be found. Now in the same reflective mood, think for a moment and try with me to determine whether it is possible in such conditions as produce the symptoms of Asiatic cholera, it is safer to introduce other poisonous products to neutralize the noxious elements in the blood and cells, or whether it is a better process to, without the introduction of additional foreign substances, remove what we already find in the blood. To make this proposition clearer, it could be stated in another way, namely, the body is already bearing a crushing burden; shall we add other foreign substances as an additional burden to the load already carried? The principle seems to me to be at fault. The principle is the principle of allopathy, but in the light of facts is it a safe principle to follow? It is reasonably scientific to produce in the laboratory, definite results in vessels of glass by the use of fixed reagents; in the organic laboratory of the living body, no such definite results can be demonstrated. The vital principle is an entity which enters into the formula and may be represented by the unknown quantity x in algebraic equations. Great and laudable efforts have been made to prevent as well as to cure this disease by inoculation.

Ferran, of Valencia, Spain, thrilled the world ten years ago with his proposition of a universal cure for this disease. His glory was then at its zenith. His fame has long since faded. So obnoxious became his proposition to the government of Spain that laws were adopted to suppress Ferran's cholera inoculations.

A worthy colleague and laborious investigator, Professor Haffkin, of Pasteur Laboratory fame, proposed a modified inoculation for the prevention and cure of cholera in 1892. A reporter of the New York *Herald* was inoculated at the Pasteur Institute, and with credentials sent to expose himself to Asiatic cholera at Hamburg in September, 1892. The same reporter had been similarly inoculated by Ferran in 1886 and had the courage to make further exploits in behalf of his newspaper, at Hamburg. A very widespread opinion prevails in America that the exploit of the New York *Herald* reporter during the ten days' stay as a nurse in the Hamburg hospital, constitutes a proof of the validity of Haffkin's claim, but the scientific world of Europe knows differently. *En passant*, it may be interesting to state at this place that further experiments have been made by Professor Haffkin in India with the cholera inoculations and, unfortunately for the proposition, reports have recently come to me from reliable medical sources, that a greater percentage are attacked with cholera who have been previously inoculated than of those who have not been inoculated. This subject of prevention, however, is to be discussed by me in a paper to be read before the Section on State Medicine.

The result of prolonged recollection, covering many years, and the observations resulting from personal experience in the cholera epidemic in Europe of 1892, is the conviction that there is provided in the laboratory of the universe a remedy which surpasses the results of human ingenuity as much as does the sun surpass in brilliancy the light of the artificial lamp. The all-prevailing and all-wide remedy, the greatest product of omnis-

cient nature's laboratory, which alone can cope with this pestilential disease of the human race, is nothing more and nothing less than the unmatched, unmatchable H2 O. Pure water is absolutely the only trustworthy cure for cholera, and if it came at a great price it would probably be more greatly valued. The human organism is so constituted that if it is assisted by H2 O, every morbid element may be eliminated out of its domain. The acutely poisoned body quickly recovers its equilibrium and its harmony of action as soon as the processes of elimination can remove the invading poison. In the construction of the mucous lining of all the accessible cavities and channels it is prepared by an undiscernable law to successfully resist the entrance of every form of organism. The products of organic action alone are able to pass into the blood. If sufficient quantities of pure water, of a suitable temperature, are introduced into the body through the natural channels, it is actually possible to wash morbid products as well as organic forms of life, out of the human body. The mouth gives entrance to the causative germs in Asiatic cholera. This is quite conclusively established. The locality of the development and formation of the toxin in the earlier stages is determined to be in the upper end of the small intestine; and from experience, as well as from the powers of reflective analogy, there is no doubt that the system can be saved from death if the morbid entity, the germ, is literally deluged away from the alimentary canal by the copious use of a remedy that cannot be of the slightest danger to the victim. The amount of water to be used varies in different cases. It is impossible to use too much; it is possible to use too little. From the earliest moment that the patient is seen, the propositions should be, first, wash the whole alimentary canal with pure water; wash the lower portion by introducing irrigations of warm soapsuds or merely warm water into the colon sufficiently frequent and sufficient in quantity to cleanse that portion of the bowel effectually. The frequency of washing that portion of the bowel which is accessible from the rectum should be one, or two, or three, or four times a day, according to circumstances. At the same time from one to ten quarts of warm pure water mildly medicated with Peroxide of Hydrogen or **Hydrozone** should be administered at regular intervals, during the day, as the prescribed remedy by the mouth. If the patient vomits, very well. Immediately re-introduce the quantity of water that was vomited. No harm can be done in any case, and if it is possible to save life it is possible to save it through this method. It is the quickest and surest method of exciting the activity of the kidneys, and it is the safest. It is the rational and effective measure for maintaining the volume of the blood. It is the scientific process by which to establish cutaneous circulation in the capillaries.

The use of simple and useful hygienic measures are the same as in other prostrating diseases. Patients should be fed with regularity at not too frequent intervals, giving the proper time, between administrations of simple food, for its digestion. The use of appliances for maintaining the heat of the body are not to be neglected.

The precise details of the method of treatment indicated at this time will be forthcoming in a subsequent paper.

WATERY ULCER.

By M. F. Richards, M. D., of Toledo, O.

(Abstract from the *Homœopathic News*, of St. Louis, Mo.)

Editor *Homœpathic News:*

About two months ago I treated a lady for a small, watery ulcer, on her neck near the shoulder. It had troubled her for years, and largely because it would be chafed by the collar or neck band of her dress. It would scab over and heal for a short time and then it would break out again. I made one application of Hydrozone, full strength, until the scab was entirely eaten off and the ulcer thoroughly clean. Then pineoline was applied on a piece of cloth and kept renewed once or twice a day. In two weeks the ulcer healed over nicely, and has remained well ever since. She has taken no extra precaution about chafing of collar or neck band, either.

SHORT NOTES ON THE VALUE OF HYDROZONE IN VARIOUS DISEASES.

By S. J. Wimmer, M. D., and F. S. Parsons, M. D.

(Taken from *The Physicians' Vade Mecum.*)

(Published by The Medical Publishing Co., 718 Betz Building, Philadelphia, Pa.)

The quotations extracted from this work are taken from paragraphs on the treatment of the various diseases enumerated, from the midst of much material of value to the general practitioner.

"*Stomatitis.*—Wash out the mouth frequently with one part Hydrozone in six parts of water and administer glycozone internally after each meal to subdue inflammatory conditions of the stomach." p. 178.

"*Retro-Pharyngeal Abscess.*—When the abscess has been opened pus should be destroyed by spraying the pharynx with a mixture of Hydrozone one part and water three parts," p. 180.

"*Oesophagitis.*—One tumblerful of ozonized water made of Hydrozone one ounce, water two quarts, as a drink three times a day and one teaspoonful of Glycozone after each meal will accomplish a cure," p. 181.

"*Chronic Gastritis.*—A tumbler full of ozonized water made of one ounce of Hydrozone to two quarts of water administered as a drink three times a day; Glycozone two teaspoonfuls before each meal," p. 183.

"*Membranous Enteritis.*—Wash out the intestines every morning with ozonized water made of one ounce of Hydrozone to one quart of lukewarm water. Do not mind the momentarily distressing symptom which accompanies this enema. Every evening administer an enema of Glycozone one ounce water twelve ounces," p. 192.

"*Dysentery.*—Irrigation with warm water and Hydrozone as practiced by Dr. Lee is well recommended. The same treatment is also recommended in cancer of the intestines," p. 194–6.

"*Cholera.—Cholera Infantum.*—Large irrigations of hot water made soapy is introduced into the colon through a suitable rubber tube and the stomach cleansed with Hydrozone given in half cupful doses together with hot water freely. This is a perfect antiseptic and should be continued until convalescence is established," p. 225 and 321.

"*Diphtheria.*—Hydrozone to disinfect the discharges and destroy the germs and remove false membrane, it is thorough, quick and effective," p. 234.

"*Typhoid Fever.*—Hydrozone one ounce, water twenty-four ounces as a beverage to disinfect the alimentary canal," p. 256.

"*Measles.*—Inflammatory condition of the mucous membrane of the throat and air passages will be promptly subdued by spraying with Hydrozone one part, water eight parts," p. 60.

RATIONAL TREATMENT OF PERTUSSIS.

By FRANCIS T. B. FEST, M. D., Plank Road, Mich.

(Published by *The Journal of the American Medical Association*, Chicago, Aug. 17, 1895.)

With every disease its etiology shows us the way for its treatment. Therefore it is necessary to recapitulate the etiology of every disease for which we wish to outline the therapeutics.

Pertussis or whooping cough is a contagious disease, which manifests itself in spasmodic cough. Although some bacteriologists have found in the sputum-bacilli, we are unable so far to determine their rôle, whether causing, accompanying or only accidental

It is a local disease of the larynx, acting upon the nerve supply, and causing spasms of this organ. The course of the disease shows three distinct phases, the catarrhal, paroxysmal and declining.

The first stage shows only symptoms of mild catarrh of the bronchi, nose or conjunctiva. Pathognostic for pertussis is only the excessive watery secretion from the affected regions. This phase lasts from two to seven weeks, with infants often a few days only.

The paroxysmal stage affirms the diagnosis by its characteristic "whoops." The expectoration is watery, sometimes bloody. In many cases vomiting follows the paroxysms by mechanical irritation. The vomiting in return can cause disorders of the digestive apparatus. The whoops at times occur as often as every half hour, and as thereby the cyanotic condition which accompanies the whoops occurs too frequently, they lead to asphyxial convulsions and even death.

In the respiratory apparatus the irritation causes, in many instances, capillary bronchitis and catarrhal pneumonia. After duration up to ten weeks the paroxysms are less severe, show themselves more rarely and the disease goes over into the declining stage. At this time the sequelæ or secondary lesions mainly demand our attention.

As we have seen, the disease is a local one. It primarily affects only the larynx; all other symptoms are secondary. The circumstance forms the basis of our treatment. The disease is local—ergo, we treat it locally; it is of neurotic character—ergo, we give a drug that acts upon the nerves.

With contagious local diseases, rational local treatment consists in destruction of the contagion by antiseptics—the most powerful is the most rational. Therefore every local application of any antiseptic improves to a certain degree pertussis. If we cast a glance at the literature, nearly everything was tried; phenol, boracic acid, thymol, resorcin, naphthalin, creosote, benzol, bromoform, mercurials, etc., but they all more or less are of irritating action upon the surface they are brought in contact with, or if not irritating their action is so mild that their therapeutic effect is as mild too. The experience of the last few years proved the superiority of Peroxide of Hydrogen over all other antiseptics, except when we have to handle metallic instruments. An exception which interferes not in pertussis.

In pertussis, I used the Peroxide with great success for local applications in this way: the child's head is leaned backward and held firmly, another person pulls out and depresses the tongue to bring the glottis into good view; then by means of a bulb atomizer consisting of glass and rubber only, I direct a spray of Peroxide of Hydrogen solution towards the larynx and if possible through the glottis. This is much facilitated if the child is old enough to pronounce the sound ā.

I always prefer the 30 volume Peroxide of Hydrogen (Hydrozone) and dilute it in the following manner: Hydrozone, one part; distilled water, ten parts; glycerine, one and one-half parts.

If the parents are docile they can be instructed to repeat the application twice or thrice a day. If the physician has a chance to apply it himself, he does well to make the solution fresh every time. At all events it should be made fresh every other day on account of this mixture being unstable.

Of all drugs only one has a really aborting influence upon pertussis, the old reliable, often abolished and always restored belladonna. The only secret of its right administration is the circumstance that we have to give such doses to get the belladonna action; the flushes, (Jacobi); otherwise the administration is without value.

A child of 2 years requires 6 drops of the tincture, three times a day; with the age the dose has to be increased to the proportion of 1.00 as a maximum single dose for an adult (gtt. xxv).

The root, the extractum alcoholicum fluidum can be given to infants of six to eight months in doses of 0.01 t. i. d., children of 3 to 4 years require of the same 0.3. Atropin may take the place of belladonna, beginning in a child of two years with 0.00065 t. i. d. and increase proportionately.

All complications must be abated in time, else our patient will be emaciated. If vomiting occurs at the paroxysms, give menthol. If there be gastritis and catarrh of the bowels, give calomel, bismuth, or still better Glycozone. Often we meet gastralgia; then I prescribe for a child over 2 years:

℞ Belladonnæ tinct. 2.00
Mentholis 2.05
Spir. frumenti 10.00
Glycerini 20.00.

M. D. S. Teaspoonful every two hours.

Glycozone administered in the proportion of two teaspoonfuls, diluted in a wine-glassful of water, gave me the most gratifying results in acute cases.

Are the paroxysms severe, we can easily control the spasm by an application of cocain to the larynx.

For the general treatment we shall advise fresh air, good nourishment, tonics and inhalations of ozone. With such treatment the disease can be cut off to a period of only a few weeks.

EDITOR OF *New York State Medical Reporter*, OF ROCHESTER, N, Y.:

In your July number you call the attention of the profession to a report from your issue of January, 1895, to a reprint of the *Times and Register*, Philadelphia, of an article by Dr. Endemann, chemist, of the relative value of the Medicinal Peroxide of Hydrogen preparations found on the market. In it he condemns No. 8, Oakland. In a subsequent examination he states that he did not discover any traces of baryta, and that it is in strength equal to all claimed by them. The experience of the Williamsport Hospital is large in the use of the Peroxides of Hydrogen. Comparing Oakland, Squibb's and Marchand's, we find that Marchand's is cheaper at a larger price than either Oakland No. 8), or Squibb's, as a smaller amount produces a larger oxidation.*

Respectfully,

B. H. DETWILER, M. D.,

Aug. 5, 1895. Williamsport, Pa.

MEDICINAL TREATMENT OF TYPHOID FEVER.

BY GUSTAVUS BLECH, A. B., M. D., DETROIT, MICH.

(Read before the Meeting of the Mississippi Valley Medical Association, Sept. 6th, 1895.)

We have no specific treatment for typhoid fever. Hygienic and dietetic treatment alone are not sufficient, and although the so-called abortive treatment of this malady is nothing else but an illusion of a few optimistic physicians, there are a good many remedies known which will influence considerably this disease.

As late as twelve or fifteen years ago the treatment was symptomatic only, the attention being directed especially to the high fever. At that time patients died with a low temperature.

To-day our treatment is more rational. We have investigated into the cause of this disease, found it to be of microbic origin, hence we treat typhoid fever antiseptically. The germs are found principally in the intestines, hence we will employ intestinal antiseptics. I will speak of it later.

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* See p. p. I to V, also p. 154, Reports by Dr. H. Endemann, Prof. L. D. Kastenbine and Dr. J. P. Parker. These reports establish the relative value of the different brands of Peroxide of Hydrogen which are found in the market.

As an antipyretic, quinine was a favorite about fifteen years ago. At present its use is considerably reduced and modern antiseptics (phenacetine, antifebrine, antipyrine) have been substituted. Hydropathy has a great many friends. On the other hand the number of opponents cannot be underrated. Medicinal antipyretics in infectious diseases are dangerous, as they oppress the heart. I treat the fever if it reaches a high degree internally with alcohol (wine, cognac) externally sponging with a twenty per cent. aqueous solution of alcohol.

Now to the antiseptic treatment. Intestinal antisepsis is the parole. My previous experience with Hydrozone in gastric and intestinal affections in both adults and children induced me to try it in typhoid fever. See my report headed "The Rational Treatment of Cholera Infantum," published by the *New York Medical Journal*, (March 2d, 1895). I note with pleasure, that the editor of the *Mirror*, Dr. I. N. Love, of St. Louis, the well known teacher of Pædiatrics, in an editorial in the June issue of his valuable monthly, fully agrees with my methods.

I found Hydrozone not only to be a good antiseptic but a splendid remedy against the stupor, in which all of my patients were laying and which clearly proves that the cases that I had to deal with were serious.

Soon after a few doses of Hydrozone (diluted with water 1 to 32) were administered, they felt comfortable, the semi-unconsciousness ceasing. I think the blood and blood corpuscles become saturated with oxygen and thus the brain is kept in activity. I alternate the internal treatment between Hydrozone, hydrochloric acid and alcohol.

Hydrozone has proved to be in my hands, more powerful than any other antiseptic, and yet it is harmless. As a direct medication I irrigate the bowels of every typhoid fever patient with four quarts of clear water to which two ounces of Hydrozone are added. I would repeat this procedure twice daily. Depending on the temperature of the body, I would use cold water in high fever, otherwise lukewarm water will be more agreeable, and accomplish the same purpose. Irrigation of the bowels with cold water has also an antipyretic effect. Such irrigations will also check the diarrhœa and encourage a natural catharsis. They also reduce the hyperæmia and inflammation of the intestinal mucous membrane, annihilate the bacilli and if ulceration be present, will stimulate granulation and produce a healthy surface. This irrigation with diluted Hydrozone is the best remedy to prevent perforation of the bowel.

In order to obtain the desired results from irrigation, we must introduce the rectal tube beyond the sigmoid flexure. The tube which should be neither too flexible nor too stiff, must be well oiled and carefully introduced. In this way, the fluid will enter even the cæcum and reach the seat of the disease.

The treatment as I have outlined in this paper will not only have a curative effect but will also prevent the usual complications. Of course, symptoms, which per se are liable to influence the disease or endanger life itself, must be treated accordingly. In conclusion I beg to submit a short report of six cases in which the above treatment was successful.

CASE 1.—Otto S., German, shoemaker, aged 24. Saw him first August 14, 1894. Has been actually sick but a few days, although as he said, he felt ill for over a week. Headache, slight chills, thirsty, constipated, temperature 102.5 slight cough. Physical examination of chest and abdomen gives negative result. Could make no definite diagnosis. Prescribed calomel and bicarbonate of soda. Saw him again on the 16th. Temperature almost 104. Could feel swelling of the spleen. Tympanites. Sleeps bad in night time. Diagnosis. Typhoid fever. I ordered at once diet and sponged the body with diluted alcohol. Temperature taken five minutes after sponging 102. On the same evening I made an irrigation of the colon. A good deal of fecal matter was evacuated.

August 17, Fever 104 degrees. Arrhythmia of the heart. Headache intense. No appetite. Sponging of the body by nurse. Irrigation whenever fever high was ordered. Hydrochloric acid.

August 18, same symptoms. Stupor. Has been delirious all night and appeared apathic when visited. Same treatment.

August 19. Same symptoms. Roseola. Prescribed Hydrozone diluted. Rested well this night. Old treatment continued.

August 20. Appears brighter. Asks many questions as to his disease. Wants to know whether his disease, the character of which was not disclosed to him, is infectious, and if so, wishes his younger sister removed.

August 25. Slight hæmorrhage from the bowel followed by a state of semi-collapse. Was called in a hurry. A hypodermic injection of sulphuric ether was administered which improved his condition soon. Irrigation of the bowels with diluted Hydrozone was now made twice daily.

Patient was discharged September 2, and advised to observe diet and to remain in bed for a week. Complete recovery.

CASE 2.—Miss Agnes T., Irish-American, actress, age 21, of a nervous temperament. Saw her first, August 25. Patient looked pale and emaciated. She described her condition as due to over-work and mental strain. Has been sick for over a week and was treated by an Eclectic physician. Had all marked symptoms of typhoid fever which diagnosis was confirmed on the next day. The treatment in this case was similar to the former with the exception that I had to resort to the wet pack on the 30th as the temperature, 104.5, was not reduced by the sponging. Although the dry tongue and lips indicated a grave disease, the patient was always conscious and able to talk, which I attributed to the administration of Hydrozone. She made a good recovery after an illness of four weeks, three weeks being under my care. Patient left town to join a company in October, 1894.

CASE 3, was that of a robust smith, Peter R., aged 30, married, father of four children. He was first seen by a Senior student, now a physician, practicing for a living at that time under my supervision. He did not make a definite diagnosis attributing his fever to a cold, and prescribing pilocarpine and antipyretics. He called me in consultation August 20, fearing death of the patient. Temperature 105, pulse 110. Arrhythmia, stupor, swelling of the spleen was rather difficult to be determined, but I could feel an increase of its volume by palpation. Tympanites. No roseola, dry lips, dry tongue.

I advised sponging which reduced the temperature at once to 103. Hydrozone was given, one ounce to a quart of water as a drink. Irrigation of the colon with cold water and Hydrozone was practiced, and the patient's general condition improved the very evening. Mr. K., the medical student, continued the treatment, with irrigations and sponging and prescribed internally, digitalis, strychnine and Hydrozone. Patient made a good recovery. I cannot say when he was discharged, but Mr. K. informed me that he never saw him in such a grave condition any more. With moderate symptoms, he recovered after two or three weeks.

CASE 4.—Joseph S., waiter, born in Polish Russia, aged 19, eight years in this country, was never sick during that time. He complained of general weakness, chilly feeling, headache, etc., and thought the "Indian summer," as the warm fall of St. Louis is called, were obnoxious to his health, and that he contracted malaria. There were no chills, however, only a slight rise of the temperature. I saw him first, September 19, but did not think much of his trouble. I prescribed Mariani wine and patient really felt better. Was called again September 24th and found patient in bed. He told me he sometimes felt cold, sometimes warm. Temperature 101.5, pulse 90. Is thirsty and desires no food. Thinking of malaria, I prescribed 10 grains of quinine ter per diem. Conditions the next day worse. I made a different diagnosis when I visited him the next day, namely, typhoid fever. Patient was treated on the same principles as the former, but got pneumonia during the state of convalescence. After an illness of four weeks however, he completely recovered.

Patient contracted in November, gonorrhœal urethritis, which proves that the double malady left very little impression on him.

CASES 5 and 6, were sisters living in one house. A widow Mrs. L. aged 32, and Mrs. B., married one year. Both had no children. Mrs. L. took sick September

24, and called me the next day. Mrs. B., took sick September 29, and both sisters made a good recovery. Whether one infected the other, or whether the infection came from a general source, I do not know. There was nothing unusual in the course of their diseases, the same being of rather a moderate character. After two week's treatment both were discharged well.

The characteristic fever curve, the swelling of the spleen, tenderness in the iliac region and roseola, left no doubt as to the diagnosis.

The younger sister was treated by me until March for anæmia with iron and maltine. She was not anæmic before, and this condition must be regarded as due to and following the attack of typhoid fever. When I left St. Louis (in March) the anæmia was much improved. She felt stronger and objected to be treated by a physician declaring that she feels the maltine and iron preparations will bring her back to full health.

MALIGNANT SORE THROAT AND ITS TREATMENT.

By JAMES OSBORNE DeCOURCY, A. M., M. D., St. Libory, Ill.

(Read before the twenty-first annual meeting of the Southern Illinois Medical Association, held at Carbondale, Ill., May 9 and 10, 1895.)

(Published by the *Courier of Medicine*, for July and August Issues, 1895.)

It is in compliance with special request from your distinguished president that the author ventures to add a word upon a subject which for several months past has received more scientific thought, perhaps, than any other one subject which concerns the profession from a pathologico-scientific standpoint. There are various forms of sore throat which may be called malignant; but the attention of this Association is directed by this paper to that acute, specific, contagious disease, beginning by an infection of the throat, characterized by local exudation, glandular enlargements, systemic poisoning, and having various paralyses for its sequelæ. The technical name by which it is generally called (derived, as it is, from the Greek *diphthera*, leather, and *dipho*, soften) at once portrays the peculiar nature of the pathological condition, and when the soft, leathery-like membrane has been formed and observed by the physician, a picture that cannot be erased is engraved on his mind. This malady has ever been a terror to the faculty, as well as to the laity, whenever and wherever it has made its appearance. Since the profession has had so much literature upon this subject from so many different standpoints, through the medical press during the past year, it seems that any lengthy scientific exegesis of the subject at this time could scarcely be expected.

The more salient points, therefore, will be touched, some personal observations given along the line, the gate set ajar, that the members present may enter the field, unveil the *materies morbi*, and discuss their *modus operandi*, *ad libitum*. As to the cause of the disease, the opinions of authors and pathologists of eminence have been at variance, and may yet be said to be divergent. Hueter, Oertel and Virchow were among the first to advance the opinion that micrococci produce the pathological condition, and, therefore comprise the primary cause of the disease. On the other hand, in concord with various dissenting voices, by certain filtration experiments made by Burdon-Sanderson, serious doubts were cast on micrococci as the immediate agency; but they are found to be necessary from either standpoint, and a secondary role named by the experimenter as being consequent upon their functional activity. More recently it has been scientifically demonstrated by a number of German pathologists, to the satisfaction of a portion of the profession, that this belongs to the list of bacteriological diseases.

The reasons and demonstrations set forth to establish the germ theory, so far as this disease is concerned—to the author, at least—seem conclusive; other opinions, possibly that of some of you, to the contrary notwithstanding. In regard to the contagious infectious nature, the sporadic, endemic and epidemic prevalence of the disease, it is scarcely necessary to make mention; neither its seeming alliance with scarlet fever, nor yet of its simultaneous appearance during epidemics of small-pox, measles, puerperal and typhus fevers. The contagion in the poisonous exudations and secretions of the fauces is, without doubt, the chief cause of its spread. The author believes the variation in the period of incubation to be due to several causes, among which may be mentioned the physiological or pathological condition, the age and surroundings of those exposed to and infected by the germs. From the standpoint of pathological anatomy, the first perceptible change is the infection of the mucous membrane of the fauces, quickly followed by hyperæmia of the tonsils. At the end of thirty hours or so a grayish pellicle appears on the tongue, and soon is visible elsewhere on the soft palate, uvula or tonsils. At first these patches are thin and scattered, but in a very short time coalesce. Very soon the army of micrococci marshall their forces and press their way through the mucous membrane at whatever point may be the least strongly fortified. At and around this point the forces assemble as they pass through the broken wall, and at once proceed to throw up a very singular fortification —the false membrane. The constituent parts of this membrane, its office, extension into the nares and air passages, its various changes, together with the special forms of the disease, are intentionally omitted, with the hope that the more important points may be brought out by the discussion. Little opportunity is offered the general practitioner, outside of hospitals, for accurate observations of the inroads made by the disease on the various organs of the body.

Symptomatology.—In the mild, or catarrhal form, the symptoms are similar to those of acute pharyngitis or tonsilitis; soreness, pain and irritation are felt in the throat, especially on attempting to swallow and general malaise may follow. In other subjects of a nervous excitability; or those who are laboring under some pathological condition at the time infected, the symptoms may be much more severe. Nausea and vomiting may follow, marked headache, fever and sore throat. On ocular examination the tonsils are found œdematous, the mucous membrane of the fauces infiltrated, and membranous patches are present. So great may be the œdema of the tonsils that a fatal climax may be reached before the false membrane is produced. A thick white coating soon covers the tongue. In two or three days the false membrane appears in one or more places, spreading over a considerable space in a few hours. The membrane, at first thin, constantly grows thicker the longer it remains undisturbed. The color, at first a creamy yellow or a grayish white, gradually changes to a dark red as the disease advances. About the fifth day the disease may take on the more severe form and violent symptoms follow, the temperature rising from 103° to 105° Fahrenheit. The soreness on attempting to swallow is very acute, and in a few hours the membrane appears either on the palate, uvula or tonsils. In removing the tenacious membrane the mucous is peeled off with it and a raw surface left through which the blood percolates. Should no attempt be made to remove the false membrane and to arrest its reproduction, it will spread rapidly, passing up the nares and down the tubes penetrating the air passage. Thus the blood constantly taking on poisons from the debris of the fungosus, the whole system is saturated with the infection, and a septic, or even gangrenous condition produced. Possibly this condition of things may be spared by earlier termination of the case, by spasm of the glottis, occlusion of the bronchi, pneumonia, or carbonic acid gas poisoning. It is during the septicæmic stage that the membranes take on the darker color, that the odor from the breath and discharges becomes foul and offensive. At this time, as a rule, there is but little elevation of temperature, if any at all; slow and irregular pulse. Next grangrene sets up, and a fatal termination ushered in by paralysis of the heart. Numerous are the causes which influence the behavior, course, duration and termination of malignant sore throat. The mortal-

ity is great, though no precise statement of mortality rates has yet been made. The prognosis should be very guarded, and is usually grave; is augmented the more virulent the case from which the infection was obtained. For obvious reasons, the mortality is greater in infants and young children. Good nursing has a decided influence upon the course of the disease, and should always be considered in estimating possible results. Extension into the nares and larynx is an alarming symptom; likewise bleeding, vomiting, purging, low temperature, cold and clammy skin and slow and intermitting pulse are premonitors of evil.

Cases apparently favorable have suddenly ended by paralysis of the heart. As regards the hopefulness of recovery from the various forms of this disease, the catarrhal stands first, the croupous second and lastly the septic or gangrenous.

Paralyses of various parts and organs of the body are prominent among the sequelæ which often follow the ravages of this disease. It may come on at once, be delayed for several days, or even some weeks. Fortunately, however, this paralysis is quite amenable to treatment. It is hoped that the discussion will bring out the pathological condition thus produced upon the nervous system, organs of circulation and respiration. To make a prompt and positive diagnosis in all cases is a most difficult task. At present eminent authorities in bacteriology teach that the only actual scientific diagnosis that can be made is by use of the culture fluid or microscope. A portion of the suspected exudate is immersed in the Klebs-Lœffler fluid, which is furnished in sealed glass tubes. After the fluid has been inoculated it is set away in a warm, dark place (98.6° Fahrenheit is about the required temperature) for the space of twelve or eighteen hours. If the micrococci of diphtheria are present they will by that time have produced a growth in the fluid which will be perceptible to the unaided eye. This method is not accepted by all. The microscope is regarded as the most accurate method by which to make a scientific diagnosis. The author has never yet seen two cases that were exactly alike, either in symptoms or in local manifestations. Before the false membrane has been formed it is easy to confound the catarrhal variety with acute follicular ulceration of the tonsils, or amygdalitis, owing principally in the last case, to the intense œdema of the tonsils. Especially is this true when there are no other cases of the malady in the neighborhood, and when, so far as known, the patient has not been exposed to the contagion from any source. That it has been confounded with croup there is little room for reasonable doubt.

Since croup is simply a local affection, non-contagious and not infectious, is without the characteristic general symptoms of malignant sore throat; for these reasons the non-identity of the two diseases seem perfectly patent. There is some analogy between malignant and scarlatinal sore throat, but the whole mucous membrane of the fauces is intensely red in scarlet fever, while in malignant sore throat the redness is limited to the infected area; in scarlet fever the exudation is soft like curds, and usually scattered over both tonsils and the palate. In malignant sore throat the membrane begins at one point (sometimes more), adheres closely to the epithelium, and has a characteristic color. In scarlatina the symptoms are much more severe; high fever, with vomiting, delirium or convulsions, commonly inaugurate the disease, which are wanting in malignant sore throat. At the expiration of twenty-four hours the rash appears in scarlatina, but is absent in malignant sore throat.

Treatment.—Believing that local infection is the true cause of the disease, the following treatment is suggested, being based upon the validity of the germ theory. Rational treatment necessarily resolves itself into two distinct divisions: preventive and active therapeutics. In every case where preventive medicine is timely, faithfully and scientifically applied, the mortality should be zero. Unfortunately, however, this mode of treatment is at present impracticable in very many cases. In the application of preventive measures, the establishment and maintenance of normal physiological condition is of primary import.

Abundance of sunshine, the greatest of all purifying agents and germicides; good hygienic surroundings, absolute cleanliness indoors and out, internal and external, are

axioms, so to speak, which should form the basis of treatment in all cases. When the disease has appeared in any locality, the whole population should be informed at the earliest possible moment, so that suitable precautionary steps may be taken to suppress the outbreak. The mouths and throats of all children who are under fifteen years of age and living in the infected district should be carefully examined from day to day.

Mouth washes, gargles and sprays of trustworthy germicide agents, should be freely used in every family where there are children, and especially among the young children, as well as all those who may be exposed to the poison. There are many germicides in active use, but the author has obtained the most satisfactory results from the use of **Hydrozone**. No ill effects are consequent upon the extensive use of **Hydrozone;** and when diluted can be given internally to the new-born infant. Immunity of children produced by the new and very popular agent, antitoxic serum, before, or at least as soon as exposed to the infection, is already regarded by some as the best known preventive and active treatment. There are many things which conspire to influence the active treatment—the age of the patient, his physiological or pathological condition at the time he is infected, the length of time the poison has been in the system when the physician first sees the case, the particular form of the disease and the general surroundings of the patient are all to be noted, and are worthy of careful consideration. The earlier the disease is recognized and the sooner the treatment is begun the better will it be for all concerned, and the greater the chances for recovery. As venom by the sharp fang implanted beneath the skin quickly ramifies every part of the living organism, producing general toxic effects, so it is in this disease; the infection from a single spot migrates into every nook and corner of the system. For complications that may arise during the course of special cases no prescribed plan of treatment would apply. The physician in charge is at the helm; wisdom and good judgment must be brought into play as compass and needle to direct him in the skillful management of the case, so that, as the vessel advances through the tempest, the rocks and sand-bars lying concealed along the way may be avoided. Solutions of silver nitrate, iron chloride tr. perchloride and glycerine, acids (salicylic and carbolic), potash chlorate, borax, etc., have been in use as local applications for a long time; but some of them are dangerous and I do not use them. I have found nothing superior to **Hydrozone**. It accomplishes all the good that can be obtained from any local application, routes the enemies from their strongholds, kills the invaders and destroys their fortifications. It is quite safe and free from all untoward after-effects which often follow the use of some of the other therapeutic agents; can be used in full strength, or diluted as a spray, gargle, taken internally, or used on cotton probang to mop up the "*beasts*." It should be used every hour, day and night, until the false membrane ceases to be reproduced, and every particle of the membrane destroyed at each seance. If the fungosus be removed early and kept removed hourly it is very quickly destroyed by **Hydrozone**, when applied in full strength. When the growth extends into the nares diluted **Hydrozone** should be sniffed up the nose, or the nasal douche and spray thoroughly and frequently used.

After the poison has become general the systemic treatment is quite as important as the local. The treatment should be directed against the malady from a double standpoint, to limit spreading of the local disease and to prevent, as far as possible, systemic infection. Ammonia bromide, iodine (used singly and combined), iodine comp. liqr. and acid carbolic, quinine and alcohol have been extensively used as constitutional antidotes to the poison of malignant sore throat. Since the appearance of antitoxic serum in therapeutics the mortality of this disease has been so much reduced in the various hospitals and infirmaries where it has been used, it has supplanted other agents or reduced them to places of subordination, at least for the time being.

The author's experience with antitoxin is quite limited, having used it in three cases only; but in each case the results were all that could have been expected by the most sanguine. The results following its use, as reported by the institutions and physicians who have experimented with it are very gratifying; and unless "it is possible

that the very elect are deceived" the antitoxic serum therapy is a success. The immunizing dose is from c. c. i. to c. c. vii, depending upon the age and condition of the patient. The medicinal dose is from c. c. v. to c. c. xxv, given at one injection, repeated one or more times should it be deemed necessary. The earlier the injection is given the less will be the quantity of serum required in any given case. Stimulants and quinine may perform beneficial functions, but nourishing aliments are necessary from the beginning. Beef extract, eggs, egg-nog, pure milk and malted milk are suitable articles of food for diet. They can be changed and interchanged from time to time throughout the course of the disease. Nourishment should be given at short intervals in order, if possible, to prevent collapse.

It is scarcely necessary to add that every precaution should be taken by physicians and nurses to ward off infection. The clothes of the patient and nurses, the bed, bedding, furniture, and apartments occupied, should be thoroughly disinfected. The judicious use of quinine, iron, strychnine and electricity will generally subdue paralysis that may follow or result from an attack of malignant sore throat.

THE THERAPEUTICS OF SPECIFIC URETHRITIS.

By CHARLES P. WAGAR, M. D.,

(Read before the Toledo Medical Association, November 9, 1894.)

(Abstract from the Toledo *Medical and Surgical Reporter* for December, 1894.)

A great many cases of gonorrhœa are supposed to be cured, while there still remains in the epithelial covering of the urethra, or the pockets and glands far back in the prostatic portion, a quantity of the gonococci which are not yet in active, irritative and aggressive condition, yet they are present and may become dislodged, and pass out with the urine or with the semen in sexual intercourse, and in the latter case they are injected into the female vagina and may be productive of serious trouble. At the onset of the disease, in order to render the urine as bland as possible I order fifteen grains of bicarbonate of soda, well diluted, every three hours, a brisk saline cathartic at bedtime, a sitz bath in 1 to 5,000 bichloride of mercury solution hot as can be borne, three times a day. Painful erections at night are benefited by half grain morphine suppositories, being preferable to the bromides.

I do not permit a patient to use a syringe at any stage of the disease if I can help it. As a rule putting a syringe into the hands of a patient is crude and unscientific. They will not use the injection regularly, and frequently insert the syringe in an improper manner. If I see a patient before the inflammatory stage has set in I have him come to the office morning and evening and then proceed to thoroughly irrigate the urethra with two quarts of bichloride solution (hot) 1.15,000.

Liberal and frequent irrigations of Peroxide of Hydrogen (Marchand's)* half strength, at the onset of the disease has frequently been attended with the best of results. If I do not see patients early, injections are not used until after the inflammatory stage has subsided. Another remedy that has given good results is a capsule (Merz Compound Sandalwood No. 128) composed of sandalwood oil, balsam copaiba, haarlem oil and oil cassia. This combination gives better results than either of the drugs administered alone. I have not had enough experience with any remedy for gonorrhœa to claim for it a "sure cure."

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*When Hydrozone is used instead of Marchand's $H_2 O_2$ medicinal it should be diluted in the proportion of 1 part Hydrozone for 4 to 16 parts of water, according to the degree of sensitiveness of the mucous membrane of the urethra.

THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE ACCESSORY SINUSES OF THE NOSE.

By WM. ELLERY BRIGGS, M. D., Sacramento, Cal.

Read before the California Northern District Medical Society.

(Abstract from the *Occidental Medical Times*, of Scramento, Cal., for September, 1895.)

* * * The following case is one of *Empyema of the Ethmoidal and Frontal Sinuses.* A. M., aged 68, farmer, had been suffering intense pain located in the frontal region, and below the eyes, for five weeks. He had been obliged to resort to anodynes several times daily to lessen the severe pain. The conjunctivæ of both eyes were greatly inflamed; the right lids were edematous. A hard tumor could be felt in the swollen cellular tissue in the upper part of the right orbital cavity which displaced the eye downward and outward. There was considerable hypertrophic rhinitis and some polypoid growths in the vicinity of the infundibulum. An incision was made into the orbital tumor, the cavity washed out with Peroxide of Hydrogen (Marchand's) and the wound packed with iodoform gauze. The nasal polypi were removed and the nasal hypertrophy reduced to some extent, but on account of the patient's dread of operative treatment, the natural drainage was not established nor the discharge through the orbital sinus cured. The relief from pain being complete and the few drops of glairy mucus which continued to discharge through the orbital sinus, causing the patient little inconvenience, he declined further operative treatment. The slight secretion from the orbital opening has persisted during the past two years, and is likely to continue indefinitely unless better drainage is established through the nose or the sinuses are opened and the pyogenic lining to the cavities curetted out. * * *

* * * The following case is one of *Traumatic Empyema of the Frontal Sinus:* J. L. R., æt. 30, carpenter, was struck on the right brow by a falling hammer. He had occasional pains in that region, but no urgent symptoms until he presented himself for treatment about six months after the injury. He had been suffering intense pain in the region affected for two weeks. A hard tumor, about the size of a small hazelnut, could be felt just internal to the middle of the roof of the orbit. The lid was edematous and could not be raised; the conjunctiva was inflamed; the eye was pressed downward and outward. There was some pus discharged into the right nasal cavity. The nasal cavity was healthy, with the exception of inflammation in the vicinity irritated by the pus. An incision was made into the tumor, and about a half drachm of pus was discharged. The cavity was washed out with Peroxide of Hydrogen (Marchand's) and packed with iodoform gauze. It was dressed daily, and at the end of five weeks, the secretion from the sinus and into the nose, had ceased, and the patient was discharged. About four months later the patient returned with all of his previous symptoms, pain, tumor, edema, etc. An incision was made down to the bone beneath the superciliary ridge, and considerable pus was discharged. A probe could be passed into the frontal sinus through an opening in the skull. With a sharp spoon and chisel, the diseased bone was removed, the cavity washed out with Peroxide of Hydrogen packed with gauze and dressed daily, as before. The peroxide flowed freely into the nasal cavity. After two months' treatment, the patient was discharged cured.

TREATMENT OF THE NEURALGIC VARIETY OF DYSMENORRHŒA.

(Abstract from an American Text Book of Gynecology, pp. 117-118.)

Published by Dr. S. M. Baldy, Prof. of Gynecology, Philadelphia Polyclinic.

The treatment of this form may be subdivided into general and specific treatment. In the beginning of the treatment the physician must carefully ascertain the general state of the patient. If it is of the rheumatic, gouty, or syphilitic diathesis, this must

be met by the usual remedies; in other words, the physician must treat assiduously the systemic condition which seems to predispose to the development of this neuralgia. The daily free administration of laxatives and diuretics is advisable. Should a local cause for the constipation be found in the anus or rectum, it should be removed by surgery or otherwise. Free daily evacuation of the bowels are indispensable to the restoration of the physiological balance of these patients. Constipation may lead to fecal anemia. In women thus affected neuralgic dysmenorrhea is extremely common. Rheumatism should be treated with colchicum, guaiac, the salicylates, and the preparations of potash. Gout requires the administration of minute doses of calomel, as one-twentieth of a grain three times a day, and with the citrate of potash or lithia. Syphilis calls for mercury and iodides. An anæmia demands tonics. *An indulging fermentative dyspepsia which may be one source of degenerated general health, requires gastric lavation, creosote, glycozone and other antiseptic treatment.*

ELECTROLYSIS FOR THE SURGICAL TREATMENT OF STRICTURES.*

By J. A. FORT, M. D.,

Professor of Anatomy in the Ecole Pratique of the Paris Faculte de Medecine.

Published by the *New York Medical Journal*, November 16, 1895.

It affords me great pleasure to have the honor of being allowed through the kindness of your president to present to you a new instrument which I have devised and called "electrolyser," for the surgical treatment of strictures by the "linear electrolysis" method.

It is a well-known fact that electrolysis has been discarded on account of the imperfect instruments which were used. My electrolyser has all the advantages of the urethrotome and none of its inconveniences. It looks like a small whip of which the handle contains a metallic wire projecting from the end which connects with the flexible part. This instrument, being first introduced into the urethra, is connected with the negative pole of a continuous current battery, and the positive pole is connected near the affected part, on the front of the thigh or over the pubes; then the current is turned on.

The operation, which is almost painless, requires thirty seconds (on an average), with a current of a strength of at least ten milliamperes, as indicated by means of a galvanometer. The electrolyser remains perfectly cool during the operation. In nearly all cases there is no bleeding, or but very little. The urethra is made aseptic before and after the operation, in order to prevent fever. I never allow a sound to remain permanently in the urethra for any length of time after the operation.

Usually the wound resulting from electrolysis heals quickly without any local treatment whatever, and often the patient can attend to business immediately after the operation.† In nearly all cases I pass a sound the third day after the operation, also the day after. I instruct a patient to pass a sound, No. 22 or No. 24 F., every month and every other month.

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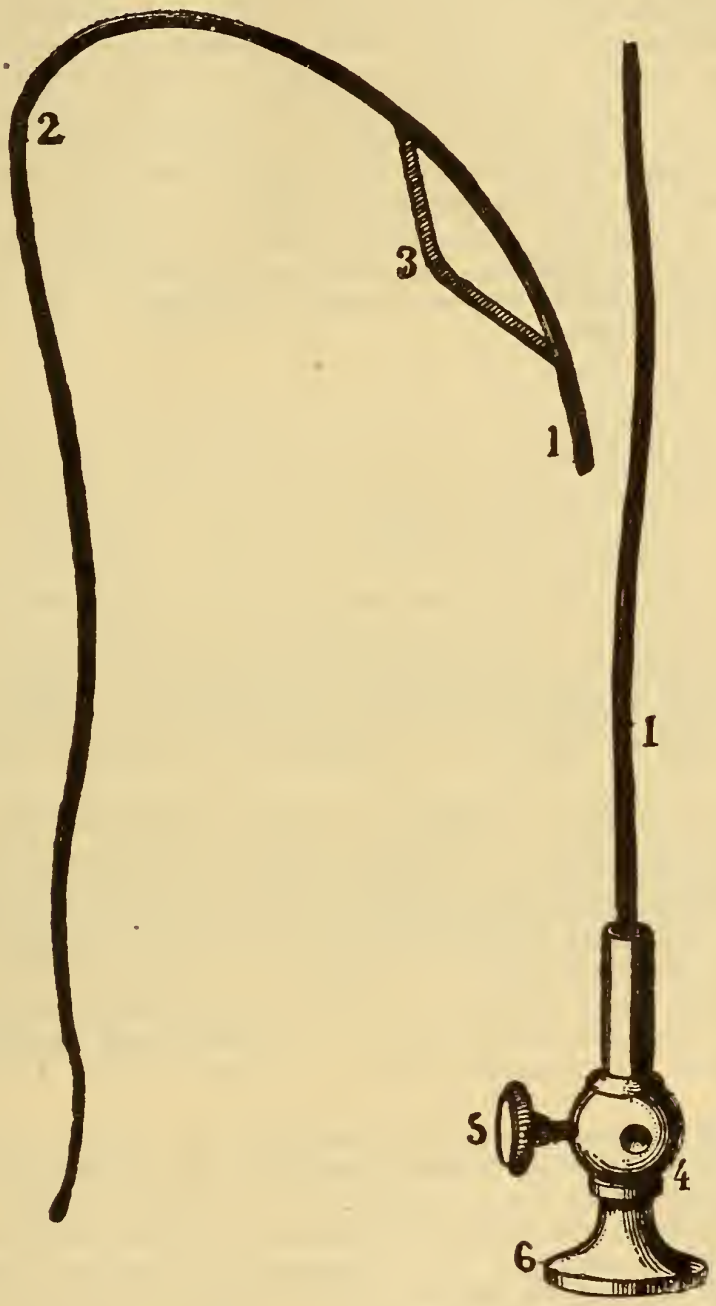
*Read before the Section in Genito-urinary Surgery of the New York Academy of Medicine, Tuesday, November 12, 1895.

†When the wound does not heal, I merely prescribe injections morning and evening with a mixture of one part of hydrozone to twenty parts of water.

With the urethrotome, which cuts blindly, the surgeon can not ascertain the degree of density of the tissue of a stricture. On the contrary, by means of electrolysis, which



The electrolyzer, shown in two parts, on account of its length. 1, 1, the shaft; 2, the conducting portion; 3, the platinum blade; 4, point of connection with the negative pole; 5, screw-head for fixing the conducting cord; 6, ivory push-button.

merely produces a molecular destruction of the stricture, although the instrument remains cool, I have been able to demonstrate that there are two classes of strictures—"soft and hard." Hard strictures are in the proportion of one against five soft ones.

The time required to perform the operation varies with the density of the stricture. Some strictures are so hard that they cannot be successfully operated upon by electrolysis.

If my American colleagues who are familiar with the French language are willing to refer to one of my books entitled *Traitement des rétrécissements par l'eléctrolyse linéaire* (this book can be procured at the library of the Academy of Medicine), they may find it quite interesting, as it will enable them to understand the improvements which have gradually been introduced in the applications of electrolysis to surgery during the last fifteen years. They will also understand how I have applied electrolysis to the treatment of strictures of the urethra, uterus, rectum, and œsophagus.

Up to date, I have performed in Europe a hundred and thirty-five operations on strictures of the œsophagus (recorded in my book), and with the exception of those which were caused by malignant growths of the wall of the œsophagus all recovered.

It has been my good fortune to meet here some leading surgeons who are authorities in the treatment of strictures, and I am very grateful to them for their kindness in giving me the opportunity to demonstrate the advantages of my method in operating upon some of their patients.

CAN ANTITOXIN STATISTICS BE RELIED UPON?

By GUSTAVUS BLECH, A. B., M. D.,

Surgeon to the German Free Dispensary, Detroit, Mich.

Published by *The Journal of the American Medical Association*, for Jauuary 25, 1895

The many fiascoes in modern medicine have taught me a lesson, viz.: Never to be the first and never to be the last one, to adopt a new remedy. Liberality is one of the first conditions for progress and success in medicine; conservatism, the preventative of poetic illusions and errors, undiscovered on account of the blinding effect of enthusiasm.

I have quietly watched the reports of cures of diphtheria with antitoxin, and have wondered how easy it is to catch the masses, even if one knows next to nothing about the *modus operandi* of a remedy. Besides, its origin and composition is mystery as yet, its preparation being controlled entirely by a few enterprising chemists. But neither this nor the fact of its introduction into the human system is apt to cause a good many dangers like leucocythemia, shall be brought as an argument against its value; even the fact that a good many eminent and thoroughly reliable physicians have reported their experiments with it as failures shall not be mentioned, and only one modest question shall be asked: Can antitoxin statistics be relied upon? I dare answer, no, not always.

I do not doubt for one moment the honesty of the reporters and their noble intentions; for the sake of the honor of the profession I will say that "figurers will not lie," but I cannot help asserting that "figures will." The fact is, that every case reported as diphtheria, is indeed, not always true diphtheria. In some cases the microscopic examination alone was sufficient for a diagnosis, and that was false. In other cases, the physical signs, the clinical picture was the medium, and that was false also. Both together, microscope and thermometer, eye and hand, must be employed to obtain a correct diagnosis.

Diphtheria, true diphtheria, in spite of horse, jackass or any other quadruped serum, is a grave, constitutional disease, the prognosis of which is always doubtful. It is exaggerated when one of my friends asserts, that he makes a diagnosis of true diphtheria post mortem only; but there is some truth in that intended joke. There are plenty of poor children running around the streets with sore throats, follicular tonsilitis, rhinitis fibrinosa and never take a drop of medicine and get well. And in some of these a physician is called in, and a few hours later the health inspector is placarding the house. If, by chance, the parents are smart enough to call in a more experienced physician, off goes the red sign.

I had quite a number of such cases in my practice, but in one of my last ones I had an encounter with our local board of health, which ended in my victory.

The case I refer to is that of a little boy, R. S., aged 4 years. He was taken sick with sore throat, and nose, the latter bleeding on touch, membranes being expelled on sneezing. A reputable physician was called who pronounced it diphtheria. He sent a culture to the local board of health where Klebs-Lœffler bacilli were found. For some unknown reason to me, the parents discharged the physician and called me in to attend the case. I made a careful examination of the nose and throat, found a somewhat accelerated pulse and a temperature below 100 degrees F. The boy ran from one room to another and would not agree to be confined to bed. While the mucous membrane appeared to be, on the first look, diphtheria, a closer examination revealed the double malady of follicular tonsilitis and rhinitis fibrinosa. Both affections simulate diphtheria almost to delusion. The clinical picture of a grave constitutional disease, high fever, etc., which symptoms are a *conditio sine qua non* for a diagnosis of true diphtheria, were absent. On the other hand some authors have lately classified rhinitis fibrinosa with diphtheria, but the best authorities in the old and new world strongly object to such classification. The argument that if the Klebs-Lœffler bacillus be found, the case must necessarily be one of true diphtheria, does not always hold good, as Baginsky and others have found the same bacillus in different forms of rhinitis and pharyngitis. While I must admit that not every case of diphtheria is associated with a high temperature, constitutional depression, etc., such is the rule without any exception in nasal diphtheria. After nose and throat have been sprayed with hydrozone there could be found no microbe in the culture taken the other day.

The number of cases of this kind which I have successfully treated approaches closely to one hundred. If, according to the Board of Health of New York, Chicago and other institutions, they ought to be styled diphtheria, well then what is the use of injecting blood serum taken from some animal? We have in hydrozone (30 volumes aqueous solution of anhydrous peroxide of hydrogen) a remedy which not only kills instantaneously the Lœffler bacilli, but also changes chemically the soil in which their spores can develop. Its deadly action is limited to vegetable cells (pathogenic germs) and it is the most powerful stimulant to healthy granulations, having no injurious action upon healthy animal cells. In fact, my experiment taught me that hydrozone is a safe and most reliable remedy to use in the treatment of diphtheria. On the contrary, I will say:

How can we rely upon antitoxin?

203 E. Columbia Street.

HYDROZONE IN PURULENT OTITIS MEDIA.

By WM. CLARENCE BOTELER, M. D., of Kansas City, Mo.

A Report of a Case Supposed to Involve Inflammation of the Mastoid.

Published by the *Medical Bulletin*, of Philadelphia, Pa., February, 1896.

On November 4, 1895, I was consulted at my office by Robert P——, aged 24 years; occupation, laborer in the Armour Packing Company. The patient complained that for about four weeks he had been suffering from intense pain in his left ear, making it impossible for him to sleep at night, or rest during the day. The pain was so severe that at times he apparently lost consciousness and it seemed to extend through his entire brain. Upon inspection, the man's face was found terribly deformed; an edematous swelling the size of one half of an ordinary loaf of baker's bread occupied the usual location of the ear and the surrounding muscles. The auricle of the ear was almost buried in edematous tissue; upon palpation, the part was found intensely tender and

deep pressure invoked expressions of excruciating pain. The integument and subcutaneous tissue were thoroughly infiltrated. Ichorous, fetid pus was slowly exuding from an almost imperceptible meatus. The patient expressed feelings of chilliness, showing a possible septic contamination of his system. Every indication and sign pointed to possible suppuration of the mastoid cells—tenderness upon pressure over the mastoid being very marked. Efforts to localize the tenderness, whether in external meatus or mastoid, for discriminating diagnosis, were unsatisfactory. I concluded to withhold a positive diagnosis as to whether the condition was purulent otitis media or suppurative inflammation of the mastoid, and used tentative treatment for a short while. I immediately placed the patient under heroic doses of elixir of the six iodides internally. After laborious effort I succeeded in separating the edematous tissue sufficient to admit the introduction of a small Eustachian catheter into the external meatus. Through this, with a small hard rubber syringe, I injected four times daily about one-half an ounce of hydrozone, allowing it later to drain away, advising hot fomentations. The patient was confined to his bed and the best possible hygienic surroundings provided. In twenty-four hours after the treatment was commenced, the intensity of the odor, amount and character of the discharge had manifestly lessened, the swelling was reducing and the patient feeling better. The edema being lessened, the aperture was enlarged. I now recommended the injection of hydrozone through a catheter of larger calibre, every hour, requiring the head to be kept turned to the opposite side for ten minutes to allow the percolation of the hydrozone as deeply as possible into the middle ear, before reversing the position to allow drainage. I continued this treatment for a week, the man's recovery progressing with remarkable rapidity, his pain and the constitutional symptoms having disappeared about the third day. At the end of eight days the swelling had entirely disappeared, his features were again normal, and he expressed himself as perfectly well. An examination showed a circular perforation in the ear drum the size of a shot, proving that the case had been one of purulent otitis media, with septic contamination of the patient's system, and infiltration of the surrounding cutaneous tissues. Small incisions were made at two different places to permit the exit of pus from the integument. The mastoid was found not involved. The rapidity with which the disease yielded after the introduction of hydrozone through the catheter into the middle ear impressed me with the wonderful value of the preparation; for struggling with such cases during a practice of seventeen years, I have never seen its efficiency equalled by any medicinal or operative procedures.

PEROXIDE OF HYDROGEN.

By WARREN BROWN, M. D., Tacoma, Wash.

Published by *The Medical Sentinel*, of Portland Ore., February, 1896.

(Read before the Washington State Medical Society, May 1895.)

This is usually made by the decomposition of hydrated peroxide of barium by sulphuric acid. It is employed in the arts for bleaching. The usual commercial article yields about ten volumes of oxygen.

Dr. Benjamin Ward Richardson, the famous London physician, who in 1893 received knighthood from Queen Victoria, first experimented with Peroxide of Hydrogen in 1857. It was regarded then as a curiosity, and was soon forgotten. Thirty years later, Dr. Squibb, of Brooklyn, brought it prominently before the profession, and since that time it has been used more and more each year, until its consumption has reached enormous proportions.

In order to preserve hydrogen peroxide it must be slightly acid; on this account, a disagreeable irritation and smarting may be caused by its use on mucous membranes.

This can be avoided by mixing it fresh at the time it is to be used with equal parts of lime water, or spraying with lime water first.

It effervesces not only with pus, but with blood, serum, mucus and cerumen: It is one of our best antiseptics, and it is of the greatest value in removing septic clots and enveloping fluids before making applications of other drugs.

As a bleaching agent, in skin practice, it is constantly used in removing pigmentary stains, and may always be tried before resorting to bichloride of mercury in the treatment of freckles and chloasma. Discolorations of the skin and nails caused by the aniline dyes, chrysarobin, pyrogallol, sulphur, and permanganate of potash will yield to this excellent bleaching agent. Nearly all of the patent hair bleaches on the market contain peroxide of hydrogen.

Gonorrhœa may often be aborted by using a full strength hydrogen dioxide injection immediately on the very first appearance of discharge. The meatus should be closed and the solution retained for five minutes. The injection should be used four to six times in twenty-four hours. This drug is only of value in the incipient stage.

Cystitis, where pus is voided with the urine, often yields rapidly to injections of a solution containing two ounces to the pint.

Otitis media is treated by hydrogen dioxide solutions in various strengths from 6 per cent. upward. It is an almost indispensable agent in these cases.

Eye diseases, where there is a purulent external inflammation, are constantly being benefited by this agent. The Wills Eye Hospital, Philadelphia, uses a 50 per cent. strength of the so-called 15 volume solution. Blepharitis marginalis is quickly cured by touching the edges of the lids once or twice daily with a strong solution, care being taken to avoid getting it into the eye.

Ulcers of all kinds improve rapidly under its use, granulations are stimulated and surfaces freshened. For treating and cleansing venereal sores, as chancroids, etc., it is of great service.

Empyema, especially where there is from the first a stinking, sanious exudation following incision, is very satisfactorily treated by washing out the cavity with a solution from one-half to full strength.

Dr. Noble, of Philadelphia, commends this agent for cleansing the hands preparatory to abdominal operations when the skin about the nails has become horny and rough from frequent contact with antiseptic solutions.

In appendicitis, the abscess cavity is cleansed with this solution by many operators, in preference to any other antiseptic. Dr. Robert T. Morris, of New York, has laid special stress on the value of the peroxide in these cases.

In follicular tonsilitis, the use of a spray, diluted just enough to prevent the smarting sensation, and alternating with this, one of the alkaline antiseptic sprays, or gargles, is a very satisfactory procedure.

Diphtheria and all naso-pharyngeal inflammations where there is a pseudo-membranous and septic condition, have been treated very widely by means of this agent. I like the plan of Jennings, in Detroit, who uses an irrigation of an aqueous solution of one-eighth each of hydrogen dioxide and listerine. He throws the solution into the pharynx with an all-soft rubber syringe every one, two or three hours. The plan is an admirable one for treating children, and the combination is pleasant and effective.

Atrophic rhinitis is benefited remarkably by the use of a 40 per cent. spray. It should be used a few minutes before the employment of the usual alkaline, stimulating spray, and the powder insufflations. In this way the scabs are loosened, muco-purulent secretions are dissolved, and a stinking breath is converted into one that is pure and sweet.

In acute cases of eczema of the leg, we find this agent of the utmost value. The tissues are inflamed, hot, swollen and oozing, the itching is almost unendurable, the odor is offensive. To secure the best results the limb is elevated, and a diluted solution of the peroxide is applied frequently, with cheese-cloth, gauze or an atomizer. In two or three days a marked change for the better will be apparent, the pruritus is

allayed, the purulent exudation is checked, and all inflammatory symptoms are subsiding. At this stage we begin the use of a soothing ointment, such as the boracic acid or zinc oxide, using lime liniment to wash the parts instead of water. Under this treatment, combined with rest, we will see our patient rapidly cured.

Eczema of the anus will rapidly improve if the fissures are touched twice a day with this solution, then dried gently with cotton, and a glycerite of lead application made. In nearly every form of acute eczema in the first and second stages the peroxide will give us the keenest satisfaction. The regular solution is diluted with two or more parts of water. Hydrogen peroxide is an excellent anti-pruritic, and for this purpose it is widely used.

The hæmostatic value of this drug, as pointed out by Dr. Emerson Brewer, of New York, I can endorse. In operations on the nose and throat I have upon two occasions been enabled to check a persistent hemorrhage, when Monsel's solution and plugging had failed. At present I am in the habit of applying the full strength hydrogen dioxide after every operation on these parts. It is of special value after sawing out a deviated septum.

For flushing out a mammary abscess cavity this agent is invaluable.

Applied to cervix uteri, adherent mucus is removed and our medications can be applied.

Where it is inadvisable or impossible to make a complete opening of a fissure or abscess, irrigation with the peroxide will be found superior to all other antiseptics.

We have in Peroxide of Hydrogen a prompt, safe and efficient germicide. By its oxidizing power it rapidly decomposes pus, diphtheritic membranes, and other morbid putrifying material. It is a thorough deodorizer, and as a cleansing agent for foul wounds, abscesses, etc., it has no equal.

Of the different preparations of peroxide, Marchand's has been most uniformly satisfactory.

Bibliography.—Piffard, Jennings, J. Lewis Smith, Noble, Morris and others, as well as the current medical journals.

Since writing the foregoing paper my attention has been called to Hydrozone, a stronger solution of Peroxide of Hydrogen, which for some months I have been using with much satisfaction.

CHRONIC GASTRITIS OF LONG STANDING, WITH PERIODIC ATTACKS OF MIGRAINE.

By GEO. A. CURRIDEN, M. D., of Chambersburg, Pa.

Published by the *Medical Summary*, of Philadelphia, Pa., March, 1896.

The herewith reported case is one of double interest inasmuch as the patient has been under my care for a number of years, and previous to the commencement of the present treatment, I have been unsuccessful in affording much relief or preventing the recurrence of the frequent and periodic attacks of migraine, to which she had been more or less subject to since early womanhood. The cause of which I could not account for more that "a habit long continued," aggravated by gastric catarrh.

The history of the case is briefly as follows: Mrs. A., aged 55, since early womanhood has been subject to periodic attacks of migraine at intervals of two, three or four weeks, but seldom free from them for longer intervals.

An attack comes on by general malaise of usually a day's duration, repugnance of food or drink, marked drowsiness, much depression with request for rest and quiet, followed by complete physical prostration, dull frontal headache, which the least noise

or disturbance makes the more intense, invariably accompanied by violent and frequent attacks of vomiting and retching, inability to retain any food or nourishment of any kind, retention of bowels, often cold sweats, pulse somewhat slow and weak and small in volume. This condition lasting usually two days, followed by gradual cessation of symptoms.

During the whole period of usually four or five day's duration, she is unable to take nourishment of any kind, remains constantly in bed, and desires only complete rest and quiet. The previous treatment has been so varied and on so many different plans, that I refrain from mentioning them.

Two years ago I was able to prevent an attack for over two months by the use of strychnine in 1-20 grain doses t. i. d. with careful diet and artificial digestives.

In May, 1895, I put her on Charles Marchand's "Glycozone" treatment in teaspoonful doses well diluted t. i. d. using this as all other previous remedies experimentally; she commenced to improve much in general health, an unusually good appetite, without the previous distressing symptoms following, a more regular movement of the bowels, freedom from headache and in every way a decided improvement; this improvement and enjoyment of good health lasted during continuation of above treatment for over three months. Unknown to me she stopped taking the Glycozone, thinking herself perfectly well. In a few weeks had a return attack, milder and devoid of gastric distress. A similar attack two months later, both of which occured some weeks after stopping of the above described treatment, and I might say caused by imprudence in diet.

The conclusion come to, in this case, is that the headache is sympathetic, that the stomach becomes acutely inflamed by its inability to naturally and properly perform its functions, and responds to the call of nature to unload itself, and thus secure for a time rest, that the use of Glycozone has corrected the existing gastritis, and by so doing has removed the primary causes of these many years of suffering.

DISEASES OF THE EAR.

By ALBERT H. BUCK, M. D., of New York City.

(Abstract from *The Journal of Medicine and Science*, of Portland, Me., March, 1896.

When it was announced that Dr. Buck would write on "Diseases of the Ear," in the *Twentieth Century Practice of Medicine*, it was a guarantee that affections of the ear would receive the attention their importance merits, for he has been long and favorably known as a writer and teacher of the highest attainments in the department of otology which he has made his life study.

We are pleased to notice Dr. Buck's reference to the value of peroxide of hydrogen* in the treatment, particularly of chronic suppurative inflammation of the middle ear. He says: "To this drug more than to any other is due the credit for scores of cures which nothing short of a radical operation could otherwise have effected," which certainly is of the highest importance for every physician to know, especially if he can learn to use a drug the proper use of which will do away with an operation that he can not do.

In the selection of such a valuable remedy it is of the highest importance to obtain a reliable one and in this respect while there may be the product of other manufacturers in the market that is reliable, we have come to think of Marchand's, when ordering it, the same as we do of Squibb's ether when ordering an anæsthetic.

*Hydrozone (30 volumes H_2O_2 aqueous solution) will give better results in all cases, on account of its healing and bactericide properties which are far superior. See article headed: "Hydrozone in Purulent Otitis Media," p. 210.

HYDROZONE IN GASTRIC AND INTESTINAL DISORDERS.

By JOHN AULDE, M. D., Philadelphia, Pa.

(Published by the *New York Medical Journal*, August 15th, 1896.)

A period of nearly twelve years has elapsed since I first began the clinical use of hydrogen dioxide, generally referred to at the time as the peroxide of hydrogen. In 1887 I published a paper giving a detailed account of several cases in which it had been employed by inhalation, but even then I was thirty years behind the report of Dr. (now Sir) Benjamin Ward Richardson, of London, who had made a thorough investigation of its antiseptic, detergent, and healing properties. Notwithstanding the fact that this preparation has been known to the medical profession for that length of time it had achieved little or no reputation. This, however, may be explained by the fact that the discovery preceded the dawn of bacteriology. Indeed, I was one of the early contributors to medical literature relating to the clinical value of this product, and since that time I have published a number of articles, embracing practically every application, both medical and surgical, to which hydrogen dioxide is adapted.

In the present communication it is my object to direct the attention of the profession to its special value in the treatment of gastric and intestinal disorders. In gastritis, for example, there is no antiseptic which can be given with so much benefit as this remedy, because its effect is immediate, and even in considerable doses it is absolutely harmless. The same is true in regard to its employment in typhoid fever, cholera infantum, and Asiatic cholera. In the latter disease its efficacy has been thoroughly demonstrated by a number of well-known physicians, and its applicability in cholera infantum is well-known to those physicians who have given careful attention to the most modern methods in the treatment of this class of cases.

The following brief notes will be sufficient to indicate the availability of this remedy in the treatment of the disorders already mentioned, although, in view of the fact that hydrozone is a more concentrated product, and withall a permanent solution, this latter remedy should have the preference. It contains at least double the volume of nascent oxygen which has heretofore been the standard for the medicinal peroxide of hydrogen.

In gastritis, either acute, subacute, or chronic, we have to deal with an unhealthy condition of the lining membrane of the stomach. The inflammation is attended with an increased output of mucus, which seriously interferes with the normal functions of the peptic glands. By the introduction of a small quantity of hydrozone, in the strength of one part to thirty-two parts of boiled or sterilized water, this objectionable mucus is at once destroyed by the action of the oxygen which is released, and the contents of the stomach remaining are promptly discharged into the small intestine. A patient suffering from gastritis should take at least half an hour before meals from two to four ounces of diluted hydrozone (one to thirty-two) and lie on the right side so as to facilitate the action of the stomach in discharging its contents*. The antiseptic properties of hydrozone thus used are sufficient to destroy the micro-organisms and leave the stomach in a healthy condition for the absorption of nutritive pabulum. All forms of fermentation are promptly subdued by the active oxidation resulting from the liberation of nascent oxygen. The patient is then in a condition to take suitable food, which should be nutritious and easily digested, liquids being preferred until the active symptoms have subsided. Later small portions of solid food can be ingested, but all food

* In chronic cases with a large output of gastric mucous, and particularly in gastric ulcer concentrated solutions are not well borne at first, owing to the formation of oxygen gas, but this difficulty disappears with the continuous use of the remedy, and no treatment of gastric ulcer can be regarded as complete without the local employment of hydrozone.

stuffs of a starchy character must be thoroughly masticated, in order to secure the action of the salivary secretion upon the starch granules, breaking them up, and lessening the tendency to fermentation in the stomach. After taking a meal, a patient with gastritis should follow it with medicinal doses of glycozone, which contain, in addition to the nascent oxygen contained in hydrozone, a percentage of glycerin, which favors osmosis and assists in re-establishing the functional activity of both the peptic and mucous glands of the organ.

In the treatment of cholera infantum, typhoid fever, and Asiatic cholera, the same general plan should be adopted in dealing with the stomach, always bearing in mind the necessity for having the patient remain in the recumbent position and on the right side for at least half an hour after the ingestion of the solution. In addition, however, to the preliminary treatment of the stomach, the same solution (one to thirty-two) is used as an injection into the lower bowel, care being exercised to insure its introduction as high up as possible. This can be managed by having the patient lie on the left side, with the hips well elevated, and the employment of a long, flexible rectal tube. In this manner we secure and maintain an antiseptic condition in both the stomach and large intestine, the importance of which will be understood when we consider the large number of micro-organisms which grow under these favorable conditions with such remarkable rapidity.

When deemed advisable, the solution introduced into the lower bowel may be combined with large quantities of either hot or cold water, which enables us to obtain the benefits of irrigation in addition to antiseptic effects. These irrigations may be employed as frequently as deemed advisable by the medical attendant, but they will usually prove satisfactory if administered at intervals of four hours.

Although brief, it is believed this communication will prove serviceable to a large number of practitioners who have hitherto found serious difficulties in counteracting the mephitic influences of bacteria in this class of disorders, and the clinical virtues of the remedy being now so fully recognized, no one will hesitate to adopt the methods suggested, which may be conveniently carried out in addition to the usual routine treatment.

TREATMENT OF INFLAMMATORY DISEASES OF THE STOMACH.*

By GUSTAVUS M. BLECH A. B., M. D., Detroit, Mich.

Published by *The Mathews' Quarterly*, October, 1896.

For several years I have had under my care quite a number of patients afflicted with acute or chronic inflammatory diseases of the gastro-intestinal tract. The records of my clinic (143 of such cases) show that stomach diseases are, to my knowledge the most distressing ailments which may afflict human beings. When the stomach is out of order life is a burden and everything seems to go wrong.

The majority of general practitioners, as far as I could learn, still adhere to the old-fashioned treatment of gastric disorders, and I confess that during the first years of my practicing medicine I have, like others, used remedies which every one of us have prescribed, in order to relieve their patients, and to my great disappointment I never was fortunate enough to cure chronic gastritis by treating the symptoms, although I have occasionally relieved my patients, but only when the disease was not chronic.

You have—as well as myself—prescribed menthol, cocaine, opium, ice, and other remedies to relieve nausea and to stop vomiting; you have cleansed the stomach by

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*Read before the Mississippi Valley Medical Association at St. Paul, Minn., September 16, 1896.

lavage and purgatives, and subsequently irrigated the lining membrane of that much abused viscus with modern antiseptics; you have called to assistance pepsin and innumerable drugs, but have you cured your patient? No. You have merely lost track of him. The patient did not call again, because the treatment did not do him any good, and frequently because it aggravated his trouble.

So the world goes on and the poor creature afflicted with chronic gastritis goes on suffering more and more. Why did you fail to cure catarrh of the stomach? It is because you merely attempted to relieve the symptoms instead of prescribing remedies to subdue the existing pathological condition, the inflammation of the lining membrane of the stomach, which condition prevents the digestive process from being normal.

In order to subdue this abnormal inflammatory condition of the wall of the stomach antiseptics are indicated, but you know as well as I do that powerful antiseptics have the same destructive action upon both vegetable cells (germs) and animal cells. Consequently, they will in all cases aggravate the disease.

I am much opposed to the use of strong drugs in my practice on account of sad results which I have witnessed, and I put more stress on harmless, although most powerful antiseptics, than I ever did since I successfully treated hopeless cases of cholera infantum with hydrozone (30 vols. H_2O_2, aqueous solution).

Therefore my method of treatment of all inflammatory diseases of the stomach may be summed up as follows: First destroy the morbid element which is present in the stomach, so as to thoroughly cleanse the mucous membrane; second, heal the diseased surface after it has been made aseptic.

As a cleansing agent which acts both mechanically and chemically, I know of nothing as powerful as hydrozone. Therefore I prescribe one tumblerful of lukewarm water containing two per cent. of hydrozone, half an hour or so before meals.

The nascent oxygen which is set free in the stomach by its oxydizing action destroys the morbid element and cleanses the mucous membrane more thoroughly than anything I know of. This being done, the patient should wait for at least fifteen minutes before taking his meal.

As a healing agent I prescribe one to two teaspoonfuls of glycozone diluted in water to be taken immediately after meals.

The results which I obtained in submitting my patients to the above rational treatment are so gratifying that I do not hesitate to say here that the great majority of cases of stomach disorders may be cured or at least much relieved in a very short time by this treatment, which is already indorsed and used by some of our most skillful practitioners.

On this occasion I wish to state that I cured a well-defined case of gastric ulcer, at least all the characteristic symptoms, like circumscribed pain, indigestion, and hematemesis have disappeared for fifteen months under the above treatment, save lavage, which when practiced once caused an alarming hemorrhage. I wrote to the patient, who lives in St. Louis, and he informs me that neither of his symptoms have appeared since I left that city, which was about fifteen months ago. The patient has been instructed to resume the treatment as soon as even the mildest symptoms reappear, but he wrote me that he needed to use no medicine whatever.

While my experience with gastric ulcer is but limited, I could suggest no better treatment; first, because all usual remedies do not influence the ulcer itself, and second, because I have seen healed the most stubborn cases of ulceration of the cervix and chronic ulcers of the leg under the same method of treatment.

During the discussion which followed the reading of this paper, Dr. Larrabee, of Louisville, had this to say: Almost any condition found in the stomach may come from the causes mentioned by those who have spoken, but I am convinced that the portal circulation is a most important factor in these cases; and one, too, which is often overlooked. Exercise is of paramount importance, in all cases of chronic gastritis. In arresting *putrefactive changes in the stomach glycozone has proven in my hands most excellent*, but do not neglect to stimulate the liver when indicated.

TREATMENT IN DIPHTHERIA.

By E. LAWRENCE LINDER, M. D., Blackfoot, Tex.

(Published by the *Medical Brief*, St. Louis, Mo., October, 1896.)

Much has been written about diphtheria and its treatment in the *Brief*, but I will add my mite, thinking it will be of some benefit to my professional brothers.

In the beginning, I will state that I have used antitoxin in three cases, and two proved fatal. I will never use it again, unless forced to through the solicitation of the patient's family,

I will give my experience in the treatment of three cases of diphtheria:

Case 1.—In June 16, I was called to see H. R., a girl eight years old, and found her suffering with diphtheria. I at once prescribed mild chloride of mercury in two grain doses every two hours, until the bowels moved freely. At the same time I painted throat externally and internally with tincture iodine. I also ordered the throat to be sprayed with the following every two hours:

℞ Peroxide of hydrogen (Marchand's,) ℥ j.
Aquæ dest., ℥ vij.

On the 17th, I found patient about the same as on the previous day; the bowels having acted well, but not too much. I then put the patient upon following treatment:

℞ Potassii chloratis, ʒ j.
Aquæ dest., ℥ j.

Mix and give one drachm every two hours, also adding to each dose five drops of the tincture of iron.

For the throat, I used the following solution with an atomizer:

℞ Peroxide of Hydrogen, (Marchand's,) ℥ j.
Aquæ dest., ℥ vij.

M. Use every two hours with atomizer.

Also;

℞ Potassii permanganate, gr. viij.
Aquæ dest., ℥ j.

M. Use every two hours with atomizer.

I used the above solutions alternately every hour.

I continued the above treatment, and on June 22d, I discharged the patient, prescribing the following, however, as a tonic to be taken for a week or two.

℞ Strychnia sulph., gr. j.
Quiniæ sulph., gr. xxxj.
Tinct. ferri chlor., ℥ j.
Aquæ dest., q. s. ad. ℥ iv.

M. Sig. One drachm every six hours.

Case 2.—On June 19th, three days after case one was taken, I was asked to prescribe for O. R., six years old, a brother of case one. I found the little fellow suffering also with diphtheria, and put him on the same treatment as in case one except the doses were diminished. The fever being higher than in case one, I gave a few doses of acetanilid and aconite, until fever was reduced. With the same treatment this child recovered also, and on June 27th, I discharged him, leaving the same tonic that I gave his sister.

Case 3.—On July 3d, I was again called to Mr. R.'s, this time to see little G., three years old, and a brother to cases one and two. I began treatment as I had in the two previous cases. On the 4th and 5th there was little or no change. Mr. R., the child's father, having read of antitoxin and its wonderful (?) cures, asked me to use it. I at first refused and called in Dr. D. in consultation. After consulting, we agreed to use antitoxin; both of us, however, did not wish to use it. On the 6th, the condition of the patient unchanged. On the 7th, patient worse, and on the 8th, Dr. D. told the

family that the patient would die, and discontinued his visits. After much pleading, I got the father to permit me to discontinue the antitoxin. I at once resumed former treatment, adding to treatment the cauterization of membrane with nitrate of silver, and controlling fever with aconite and gelsemium solution, and acetanilid and antikamnia powders per rectum.

On the following day, the 9th, patient was resting easier, breathing freer, and condition somewhat improved. This improvement continued until the 16th, when I discharged the patient, leaving the following tonic to be taken for two or three weeks:

℞ Quiniæ bisulph., gr. x.
Strychnia, sulph., gr. ½.
Nitro-hydrochloric acid, gr. xxx.
Tinct. iron, ʒ iiss.
Aquæ dest., q. s. ad ℥ viij.
M. Sig. One teaspoonful every six hours.

The patient continued to improve, and on July 27th, came into my office with his father, looking well and healthy.

From my experience with these three cases, and especially the last one, I must confess that I have no faith whatever in this new fad called antitoxin. I will never use it again.

A CASE OF PROTRACTED LABOR.

Rupture of the Uterine Wall—Concealed Hæmorrhage—Subsequent Extensive Sepsis and Mural Abscess, etc., Ending in Recovery.

By J. N. UPSHUR, M. D., Richmond, Va.

Professor Practice of Medicine, Medical College of Virginia.

Read before the Richmond Academy of Medicine and Surgery at a meeting held October 13, 1896.

Dr. LANDON B. EDWARDS, President, in the Chair.

Dr. MARK W. PEYSER, Secretary and Reporter.

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Mrs. H., æt. 40, of good health prior to two months before delivery, when she had an attack of dysentery. I saw her at that time. She had a recurrence of the attack twice, but treated herself with the same remedies prescribed by me during the first attack. With this exception, her pregnancy had been an uneventful one.

Labor came on suddenly at 7 P. M., September 11th—pains so active and strong that I was twice sent for within an hour. When I reached my patient at 8 P. M., she looked pallid and showed evidence of extreme suffering—pains were strong and regular, coming on every few minutes. Digital examination revealed a cervix *very rigid*,

thick, and about two inches long, through which could be felt the vertex presenting in the first position. The pains, though violent and causing much suffering, made little impression in dilating the rigid cervix. To procure rest and relaxation of the cervix, about 12 P. M. I administered a hypodermic of sulphate morphia grain one-fourth, sulphate atropiæ, grain $\frac{1}{150}$. This procured her some respite from suffering for three hours, when pains again became active. Cervix had slightly softened. She was now given chloroform, but only with the effect of stopping pains. A second hypodermic was given at 7 A. M., and I left the patient for three hours.

On my return at 11 A. M., I found cervix relaxed and dilatable, and pains active and regular. Patient looked pallid, with feeble pulse, and had clammy skin. But that she had had three exhaustive attacks of bowel trouble and a wearing labor from the beginning, I should have suspected concealed hæmorrhage. Chloroform was again administered, and she was normally delivered at 12:45 of a still-born male infant weighing nine pounds. She had last felt the motion of the child just prior to the onset of labor. There was delay in the delivery of the placenta, and the uterus was in a state of complete inertia. Examination showed the placenta detached, and it was easily removed; introduction of the hand being followed on delivery by a double handful of coagula. It was evident that partial detachment of the placenta had taken place prior to the birth of the child.

The uterus remaining obstinately relaxed, the hand was passed into the cavity, which presented a feeling of a ragged bag, while on the right of the uterine wall, half way between its anterior and lateral portion, could be felt an *incomplete rupture* of the uterine wall in its long diameter about three inches long, and extending four-fifths of the thickness of the uterine wall, so that a narrow escape had been made from opening the peritoneal cavity. After administration of sulphate strychnia grains $\frac{1}{20}$, and fluid extract ergot (Squibbs) ʒ v, with introduction of ice into the cavity, the womb was induced to contract finally. I would have preferred a hot salt solution, but it was not available, and only a septic syringe with which to use it, if it had been. The patient reacted well. Having always had a free secretion of milk, tincture of camphor was ordered applied to the breasts, beginning a few days after delivery, extending its application well into the axillæ. This proved efficient, and no milk was secreted.

On the second and third days after delivery, temperature only rose to 99.4° F. On fourth day it reached 100° F. Lochia profuse, offensive, of the color of dirty dish water. Free hot douche of hot water and borax was ordered thrice daily.

But on the morning of the fifth day, finding no improvement except temperature slightly subnormal (98° F.), the uterus was washed out freely with hot salt solution. Uterus was found above the pubis, and spongy. Ordered tincture chloride iron, ergot and nux vomica in full doses every four hours.

On sixth day found little change in lochia, and that seventeen napkins had been used in previous twenty-four hours; pulse fair at 90–100; temperature as on day before. Curette (sharp) was used, and a number of dirty shreds of sloughing tissue were removed.

On seventh day, patient expressed herself as feeling better; pulse and temperature same as on day previous. Curette was again used, and large pieces of sloughing tissue were removed; curette gave way suddenly, giving sensation of entering a cavity, and was followed by a discharge of an ounce or more of thick, dirty-colored stinking pus. I believe the rupture had healed on the surface, and an abscess had developed at the bottom. The curette was freely used until discharge was slightly stained with blood. Half gallon of salt solution was run through the uterine cavity till it came away clear and odorless; patient expressed herself as feeling much more comfortable.

On eighth day, pulse and temperature same; ten napkins used; curette again applied; no shreds. Washed out with Peroxide of Hydrogen, followed by salt solution, and lightly packed with iodoform gauze.

Twenty-four hours after delivery, the patient complained of severe headache, located chiefly in the occiput. This was relieved by two doses of phenacetin of gr. v.

each, but returned when the drug wore off. Subsequently benefited by sodii bromidi gr. xx, and caffeine gr. ss. Patient had a comfortable night, has some appetite, expressed herself as free from headache, and feeling much better; said headache returned after treatment of womb. She has taken on two days full doses of quinine, but I could detect no benefit from its exhibition. Bowels have been moved on alternate days by exhibition of compound senna powder. Tongue has been clean, but pallid from beginning.

On ninth day, eleven napkins in last twenty-four hours; temperature, 100° F.; pulse, 108; had a good night, but sweated freely; appetite fair; discharge very little offensive; curette used; ℥ j of pus discharged from uterine cavity; came from site of rupture; uterus reduced decidedly in size; washed out freely with Peroxide of Hydrogen, one-fourth to three-fourths hot water, followed by salt solution. Patient complained of violent frontal headache during the dressing, which passed off when completed; light packing of iodoform gauze applied.

Tenth day, eight napkins; pulse, 100; temperature, 99.4°; no odor in discharge; on removing gauze, ℥ ss pus flowed away; uterus cannot be felt above pubis; measured three inches with probe; swabbed out with pure peroxide and replaced with gauze; complained of severe frontal headache during the dressing, which subsided when it was completed.

Eleventh day, five napkins; temperature, 99.2°; pulse, 100; on removing gauze ℥ ss pus; no sweating.

Thirteenth day, temperature, 99.4. pulse 100; no sweating.

Fourteenth day, pulse, 96; temperature, 99°F,; no flow.

Sixteenth day, pulse, 100; temperature 97.05°; convalescence established; patient sat up an hour and a quarter.

Twenty-eighth day, patient dressed and moving about her room; says she is absolutely comfortable; no pain or weakness in back or elsewhere, except a little unsteady on her feet.

Remarks.—The above case presents first in interest, the *condition of the cervix* at the beginning of labor, so *hard and resistant* as to give the impression of previous disease, which had not been the case, except a slight cervical catarrh, for which I had treated her prior to her sixth confinement, which had been rapid and uneventful. Pains seemed absolutely inefficient in producing dilatation until after the administration of morphine—the resistance in spite of such strong contractions being responsible for the subsequent complications. I am sure that the patient's pallor was due to concealed hæmorrhage from premature partial separation of the placenta, not appreciated at the time because of my knowledge of three attacks of dysentery in the previous two months and the suffering she had borne incident to the violent uterine action, ineffective and depressant. The inertia of the womb was simply muscular tire.

The rupture of the uterine wall in its long axis is of interest, because the almost invariable rule is that when rupture occurs, it is in the transverse direction. "Boudl reported nineteen cases in 40,614 labors occurring in nine years in the Lying-in Hospital in Vienna. Jolly, in Paris, found 230 cases in 782,741, excluding from his list lacerations of the cervix. Harris estimated one case in 4,000 labors. Lusk found forty-seven deaths from this cause in New York between 1867 and 1875, inclusive, or one death in six thousand labors."—(*Lusk's Obstetrics*, page 603.) I had a case of complete rupture due to after-coming hydrocephalic head—patient dying five hours after delivery.

Hagenberger estimated the mortality at 95 per cent.; C. Braun at 89 per cent. (*Lusk*, page 603.) The above facts show how rare is this complication, even though incomplete.

Another point of interest is the prevention absolutely of the milk formation by the *early* and *repeated* use of tincture of camphor in a woman who had in six previous confinements had an abundance. A long experience has proven no remedy better than the camphor in my hands. The fact that only twice did the temperature reach 100° F. in a uterus so septic as I have described, is remarkable, and the efficient action in the direc-

tion of cure of free curettage, douching with salt solution and application of Hydrogen Peroxide in stopping suppuration, evidences the great value of this therapeutic method. The violent reflex headache coming on during the dressing and disappearing when it was completed, is of interest, and shows plainly that the violent headache coming on twenty-four hours after labor, was also reflex in character.

I deem myself most fortunate to have had such a satisfactory result in this case, and place it on record for the instruction and encouragement of my professional brethren.

DISCUSSION.

Dr. Paulus A. Irving thought it remarkable that there was no hemorrhage from the site of the uterine tear. Another striking feature of the case was the low temperature in spite of the large amount of pus dammed back—the more remarkable when we consider how a little excoriation or tear of the os, or cervix is so often followed by a rise of temperature—sometimes even to 104° F. He commended Dr. Upshur for his most admirable treatment and successful issue, especially in the employment of Hydrogen Peroxide. Nothing could be added to it.

Dr. Lewis M. Cowardin called attention to the fact that Hydrogen Peroxide affects not only pus, but all organic fluids. Where a blood-clot was to be dissolved, he knew of nothing more efficacious.

Dr. J. S. Wellford thought Hydrogen Peroxide a better disinfecting agent than all others, because it produces super-oxidation of all effete matters, liberating, in the body, ozone. In employing it, we imitate the processes of Nature, changing the specific character of the ptomaines.

He asked Dr. Upshur the positions of the placenta and abscess in relation to the tear.

Dr. Arthur Jordan spoke of a case in which he had successfully used creatin, bichloride of mercury solution, *Hydrogen Dioxide, and Hydrozone*. Hydrogen Dioxide had given better results than the first two, but pus was more diminished with two injections daily of Hydrozone than three of Hydrogen Dioxide.

The President stated that in his practice a vaginal douche of *Hydrozone* (Marchand) prevented the third day fever of the puerperal state. His experience with that of Drs. Irving, H. M. Taylor, Edward McGuire, and others, in some cases of puerperal sepsis, had shown the great value of intra uterine injections of Hydrogen Peroxide and Hydrozone—simply keeping the os uteri well dilated so as to give free egress to the foaming pus, etc., that pours out. He uses a half pint to a pint each injection—diluted or not with water. Marchand's preparations are those upon which he relies.

Dr. Upshur, in closing the discussion, said the placenta was above and posterior to the rupture, the abscess being seated in the bottom of it.

He has firm convictions with regard to the value of Hydrogen Dioxide. Often the efficiency of applications to the cervix, externally, and canal, is lessened by a skin of mucus that cannot be wiped away by cotton. In cases of this kind, the dioxide on an applicator will dissolve the mucus, allowing the application to come in contact with the tissues.

For cleansing purposes, he preferred a simple solution of Hydrozone or Hydrogen Peroxide to the chemical agents, such as bichloride of mercury, carbolic acid, permanganate of potassium, etc.

The Secretary, Dr. Mark W. Peyser, reported a case of *horse-shoe fistula successfully treated with Hydrozone*. Girl, aged 16 years. An abscess developed on either side and above the anus, which were on the point of rupturing. Both were incised, and afterward injected with Hydrozone until the discharges came away clear. The solution made its way from one opening to the other, demonstrating the presence of a horse-shoe fistula. In a week it was in a fair way to recovery.

THE USE OF PEROXIDE OF HYDROGEN IN DISEASES OF THE NOSE, THROAT AND EAR.*

By W. SCHEPPEGRELL, A. M., M D., New Orleans, La.

Professor of the Ear, Nose and Throat Department of the National College of Electro-Therapeutics; Vice-President of the American Laryngological. Rhinological and Otological Society, etc.

Published by *Medical Record*, Aug. 8, 1896.

Peroxide of Hydrogen is one of the most useful agents which we have in the treatment of diseases of the nose, throat and ear; its germicidal and antiseptic properties, and its capacity for destroying pus and decaying organic matter, without injurious effect on healthy tissues, renders it almost indispensable in many cases. It has always been a source of surprise to me, that so little reference to this valuable agent is found in the foreign periodicals.

Peroxide of Hydrogen is not toxic, in fact it is used for internal medication, and the amount which may be taken without injurious effect, is well illustrated by a case recently reported, in a course of discussion on diphtheria, by Dr. Rudolph Matas. In this case, in which Dr. Matas had occasion to prescribe it for a man suffering from asthma, the patient, from a misunderstanding of the directions, took six or eight four ounce bottles of Peroxide of Hydrogen during one night, and was not only not injured by this excessive amount, but actually believed that he had been benefited.

In the disease of the nose, Peroxide of Hydrogen is an important therapeutic agent. In ozena a wash of a 25 per cent. solution is useful; or, after washing the nostrils with an alkaline or the normal physiological salt solution, the Hydrogen Peroxide, pure or mixed with an equal quantity of glycerine, may be applied locally by means of an atomizer or applicator with cotton, to remove or destroy any scabs or secretion which may be left. In this way the nostrils can be kept clean, and the offensive odor which is one of the most unpleasant features of this disease, may be prevented. In purulent rhinitis, a 5 per cent. solution, to which an alkaline has been added, is useful. It is also said to be very serviceable in controlling nasal and pharyngeal hemorrhage.

In membranous rhinitis, whether due to Klebs-Lœffler bacillus or to micro-cocci, the spraying of the nostrils with a 20 to 50 per cent. solution is indicated, and has given me excellent results. My experience in diphtheritic rhinitis with this agent has been so satisfactory that I have not deemed it necessary to use the antitoxin in these cases, as this does not seem to prevent the post-diphtheritic paralysis, which would be the only reason for my using it in diphtheritic rhinitis.

In the specific necrosis in the nostrils, Peroxide of Hydrogen is an important agent, not only for its disinfecting properties, but also for controlling the horrible odor that is present in these cases. In diseases of the accessory sinuses of the nose, Peroxide of Hydrogen is so beneficial that I use it in all cases, whether of a maxillary, frontal, ethymoidal or sphenoidal sinus. In my opinion it cleans and disinfects the infractuosities of these cavities more effectively than any other agent that we have.

In diseases of the throat, Peroxide of Hydrogen is used in follicular and other forms of tonsillitis, and in specific affections, and is a sheet anchor in diphtheritic processes in this region. Long before the introduction of antitoxin, I have had excellent results from Hydrogen Peroxide in diphtheria, and even since the use of this serum, I never fail to use the peroxide as a valuable adjunct; and I believe it to have had an important bearing on the results obtained. It attacks the membrane, disinfects the parts, and has no injurious effects when swallowed, which is more than can be said of

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The Peroxide of Hydrogen which I use, is made by Charles Marchand, New York, and this is the preparation which gave such excellent results in the above case.

many other antiseptics used for this purpose. In a recent case of laryngeal diphtheria, to which I was called in consultation, the stridor and dyspnœa were so marked that I was compelled at once to introduce an intubation tube. The tube, however, was repeatedly coughed out, and I then made use of a procedure, which I had found beneficial in former cases,—the injection of a 75 per cent. alkaline solution of Peroxide of Hydrogen, directly into the larynx by means of a laryngeal syringe. The relief given by this injection was so great, that I was not compelled to intubate again, but simply to make these injections every four hours. The patient also received three injections of diphtheria antitoxin serum, which I made at intervals of 24 hours, and the child made a good recovery.

Recently a German author called attention to the irritating effects of Peroxide of Hydrogen on the mucous membrane; this effect I have found in none of my cases, although this may be due to the fact, that in employing this agent, I make use of a small addition of bicarbonate of soda, and that I adjust the strength of the solution to the requirements of the case.

Diseases of the ear offer a good field for the use of Peroxide of Hydrogen. As a non-irritating antiseptic wash it is invaluable, as in the various forms of suppuration, especially where they are accompanied with a disagreeable odor. In diffuse or circumscribed inflammation of the external canal, Peroxide of Hydrogen is useful after an incision has been made, and in suppurative otitis media, especially in neglected cases, at 5 to 15 per cent. solution is of great assistance.

In cases complicated by inflammation of the mastoid cells, especially in the suppurative form, the indication of Peroxide of Hydrogen is clear, although this does not prevent the use of iodoform, aristol, and other antiseptic agents.

In acute cases of purulent otitis media, a 5 per cent. alkaline solution should be used, as strong solutions are not necessary, and may be injurious.

MEDICAL BUILDING.

PEROXIDE OF HYDROGEN AS A HŒMOSTATIC.*

BY M. F. COOMES, A. M., M. D.

Professor Physiology, Ophthalmology, Otology and Laryngology in the Kentucky School of Medicine.

Abstract from *Louisville Medical Monthly*, for September, 1896.

It is probably not generally known to the profession that Peroxide of Hydrogen is a valuable hæmostatic. Its contact with blood results in the almost immediate coagulation, or rather, production of fibrin. Of course this is desirable, as the clot thus formed is nature's clot, and not such as produced by the union of blood and Monsell's solution, or other preparations of iron.

The clot in this instance is one that will be easily tolerated while that produced by the iron always acts as a foreign body, and is an ugly thing to contend with, to say the least of it; as the removal of the iron clot often results from secondary hemorrhage, whereas, the clot resulting from Peroxide of Hydrogen is tough, and capable of being absorbed to a very great extent; or to say the least of it, its mechanical separation from the surrounding parts is much more easily accomplished than that of the iron clot.

One point in particular must be remembered in the use of Peroxide of Hydrogen, that it must not be pent up. Its injection into the tissues always results in great pain, because of the undue distension produced by the gases. Hence, its injection into cavities where it can not have perfect freedom, may result disastrously in the production of great pain, to say nothing of what else might occur.

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* I have found none better than Marchand's.

In ordinary nose bleed, I know of no more valuable remedy than this agent. And indeed, in nose bleed, where there is rapid dripping or a small stream it arrests hemorrhage within an incredibly short length of time.

It should be used pure, or if it is desirable, first try it with equal parts of water. The best way to use it is to inject it with a small syringe, throwing in as much as half an ounce of the mixture at a time, directing it upwards at an angle of about forty-five degrees from the floor of the nose. This will insure it to reach almost every part of the interior surface of the nose.

The patient's head should be inclined well forward so as to prevent any of the overflow going back into the larynx, which under ordinary circumstances would not be dangerous, but would be very unpleasant to the patient.

The contact of the Peroxide of Hydrogen with blood results in immediate and rapid effervescence, just as it does when it comes in contact with pus. In using it for the purpose of arresting epistaxis, no attention need be paid to effervescence; just as soon as one syringe full has been discharged into the nose, follow it up immediately with a second and third syringe full. At this time it may be well to grasp the nose with the fingers and hold it for a moment, so as to give time for the perfect formation of the clot.

If the bleeding surface is low down, and can be reached with a mop or cotton wool saturated with the peroxide, all the better. I rely upon it largely in office practice to arrest all ordinary nasal hemorrhage, and indeed I have arrested many cases of what may be termed extraordinary bleeding from the nose. It is reliable and safe, and far superior to any hæmostatic that I know of, in arresting all forms of oozing hemorrhage from open surfaces.

NOTES ON THE TREATMENT OF FÆCAL FISTULÆ.

By FREDERICK HOLME WIGGIN, M. D.,

Visiting Gynecologist to the New York City Hospital, and Visiting Surgeon to St. Elizabeth's Hospital.

Abstract from the *New York Medical Record*, Oct. 14, 1896.

At the thirteenth annual meeting of the New York State Medical Association. which was recently held in New York City, Dr. Frederick Holme Wiggin, of New York county, presented a paper with the above title. The chief cause of the occurrence of fæcal fistulæ was stated to be the delay in resorting to operative measures to which patients suffering from typhlœnteritis, or strangulated hernia were frequently subjected while their ailment was carefully diagnosticated. The view recently advanced by a writer on the subject under consideration, that the best treatment for this condition consisted in its prevention, was concurred in. But in the case in which this mishap had occurred, it was pointed out that if the opening was of small size, was located near or below the ileo-cæcal valve and no obstruction to the fæcal current existed, operative measures might be deferred, as in most instances the opening would close in a short time spontaneously. On the other hand, if the bowel opening was of large size, was situated laterally, or some distance above the ileo-cæcal valve, and was accompanied by the escape of a large proportion of the contents of the bowel, operative procedure for the closure of the opening should be speedily undertaken.

The histories of three cases, successfully treated by surgical measures were cited. In two instances, the patients were inmates of the Hartford (Connecticut) Hospital, and were operated upon by Dr. Wiggin, by reason of an invitation which was extended to him by the medical board of that institution, after several previous unsuccessful efforts to close the bowel openings had been made. The occurrence of the fistulous

opening was due in the first case to failure, and in the second case, to delay in resorting to surgical treatment of typhlœnteritis, from which disease both patients originally suffered. In the third case, the bowel opening was caused either by the pressure of the gauze used to drain the abscess cavity, or by an ulcerative process which originated from within the gut. In the first case, as the opening in the bowel was of large size, irregular in shape, and the gut was thickened and friable, the diseased portion of the bowel containing the opening, about four inches in length, was excised, and the divided ends joined by the suture method of Maunsell. In the second and third cases, the bowel openings were situated in the head of the colon, and were in both instances closed by means of several rows of sutures, after which the omentum was drawn over the former site of the fistula, and retained in position by sutures.

In describing the technic employed, the writer laid much stress upon the following points, viz.: the thorough disinfection of the parts, including the interior of the bowel, with Hydrozone, the closing of the intestinal opening, when possible, before the breaking up of the peritoneal adhesions, and the opening of the general cavity, the removal of any existing obstruction to the fæcal current, the disinfection of the bowel surface with a solution of Hydrozone, before and after the placing of the sutures, the control of oozing from the cicatricial tissue by the same means and the closure by a single row of silk-worm gut sutures without drainage of the abdominal wound after the washing of the peritoneal cavity with saline solution, some of which is allowed to remain.

In concluding, the writer stated that ever since September, 1893, when he had proved the value of Hydrogen Dioxide as an effective antiseptic, which in proper solution did not unduly irritate the peritoneum, when followed by a six-tenths per cent. saline solution, he had had little reason to fear the danger of causing septic peritonitis from the accidental escape of pus or fæcal matter while operating, and that when this complication had occurred, it had been invariably successfully met by the use of Hydrogen Dioxide in the manner described in the paper. He advised the excision of the diseased portion of the gut in those instances where it had become much thickened and friable, and expressed the belief that with a clearer understanding of the objects to be attained by operation—*i. e.*, the restoration of the integrity of the intestinal canal, as well as the closure of the opening in the bowel—future operations for the cure of fæcal fistulæ would more frequently result successfully than they had in the past.

The paper was discussed at some length by Dr. H. O. Marcy, of Boston, and Dr. Joseph D. Bryant, of New York county, who commended it and in the main, endorsed the writer's views.

MAMMARY ABSCESS.

By A. G. CALDWELL, M. D., of Ballard, Ky.

Published by *Louisville Medical Monthly*, for November, 1896.

One of the most troublesome complications of lactation is the formation of abscess in the breast; an occurrence we often meet, and which, if improperly treated, may by long continued suppuration and the formation of numerous sinuses in and about the breast produce very serious effects upon the general health, and even death by blood poisoning. The causes of breast abscesses are numerous, the most common being fissures or erosions of the nipples, hence those very common affections about the nipples should be promptly treated. The abscess may form in any part of the breast, or in the areolar tissue beneath it. Abscess is usually ushered in by a slight chill and general constitutional symptoms. These symptoms vary according to the severity of the inflammation. Fever is always present with rapid pulse and general malaise; rigors and sweats follow suppuration, and if not promptly treated at this stage it leads on to fistu-

lous tracts which in time completely riddle the breast. The general health soon suffers to a marked degree, and if it be left to suppurate for months the patient becomes reduced to profound and even dangerous debility.

Treatment.—In many cases it may be aborted by removing the engorgement of the lacteal vessels by hand friction and saline cathartics, and giving the affected parts complete rest. When the general symptoms indicate the formation of pus, cleanse the breast thoroughly with antiseptics, and make a free incision at the most dependent part, parallel with the lacteal ducts to avoid injury to them. Avoid the admission of air, press out all the pus, then irrigate thoroughly with Hydrozone (Marchand's) and boiled water, equal parts, until foaming ceases; then inject the cavity thoroughly with a 5 per cent. solution of carbolic acid, and if well done it seldom has to be repeated in acute cases.

In chronic cases the same treatment suffices. When all sinuses and pus pockets are broken up so the Hydrozone can reach all parts, keep incision covered with antiseptic adhesive plaster and provide capillary drainage by inserting a strip of iodoform gauze. For the pain give opium, gentle salines for the bowels, and tonics for the general health. For high fever give large doses of quinine, and cactine to support the heart.

PEROXIDE OF HYDROGEN IN DIPHTHERIA.

By A. B. CLAY, M. D., Rutherford, Tenn.

(Abstract of a paper read before the Gibson County Medical Society.)

Diphtheria is a highly infectious disease, frequently assuming a severe epidemic form. Characterized by local fibrinous exudate, usually, though not always, upon a mucous membrane. There is strong reasons to believe that the infection is given off in the breath and various discharges. The sick should be isolated from the well ones, disinfection of everything that has come in contact with the patient; when a death occurs from the disease the body should be thoroughly saturated with some powerful disinfectant and placed in a coffin closely sealed, and the physician in attendance should request the family to have a private funeral. The infection lasts for an uncertain time after convalescence.

This peculiar inflammation of the fauces is attended with the deposit of exudation which may locate at any one or more points, extend and coalesce so as to form extensive patches or cover the entire surface. The organs may suffer from considerable ulceration or sloughing. Abscesses may form on any of the glands. In color the lymph may be gray, white, slightly yellowish, dark or dirty looking, greenish or gangrenous, and it may form in the throat from twelve to forty-eight hours after inflammation sets up. Should it be removed, a raw, bleeding surface is left, which is again speedily covered by a fresh deposit, the exudation forming in the substance of, as well as upon, the mucous membrane, thus causing superficial destruction of the parts. There is constitutional disturbance which may become more or less severe, followed by nervous disorders. The patient whispers or cries with a husky voice, has a dirty-looking, opaque complexion, and the skin generally may assume a dirty, yellowish tint. There is an ordinary febrile attack. The temperature may rise to 103° or 104°. The pulse is rapid and feeble and the respiration hurried. The respiratory passage may be involved. The invasion is generally gradual, there being a feeling of languor and illness, more or less depression and weakness, often with chilliness, anorexia, nausea, diarrhœa, drowsiness, asthenic condition, dyspnœa, pulmonary complications, distention of lungs, scanty or albuminous urine. Diphtheria is liable to occur in any season but prevails more in hot and dry seasons, when it often becomes epidemic, especially in

large centers of population. Now and then a sporadic form is met with. The contagion has not diminished in cities within the past few years like many other contagious diseases, although it frequently prevails with great severity in country districts. Prognosis, always grave, is worse in children than adults. The chief signs of danger are: Repeated vomiting or diarrhœa, epistaxis, great discharge from nares, implication of larynx, with consequent interference with respiration, a very rapid, feeble or infrequent pulse, delirium, adynamia, suppression of secretion, prostration, cyanosis. There is no specific remedy for the disease. Lowering measures are not well borne, a supporting treatment being always indicated. All hygienic conditions should be observed, the patient's room kept in a uniform temperature—65° to 70°—and the air kept moist with steam. A generous diet—milk, eggs, soups, with stimulation, whiskey, brandy, ammonia—should be prescribed. Disinfectants should be freely used about the apartments. Mild purges, such as sulphate magnesia, seidlitz or phosphate soda, might be given beneficially.

The use of drastic purgatives is to be deprecated. Calomel is highly recommended. Local treatment should be actively used. A great number of astringent and antiseptic preparations—such as nitrate of silver, tincture perchloride of iron, dilute hydrochloric acid, glycerine and carbolic acid, papoid in listerine—have been used with advantage. Spraying nose and throat by means of the atomizer is very efficacious. For this purpose the Peroxide of Hydrogen or Hydrozone (Marchand) diluted sufficiently or full strength, is very advantageously used. Two cases of the number reported were in an extreme condition and resisted the usual treatment. From the time the Hydrozone was used, the patients began to improve, and were soon in a state of convalescence.

HYDROZONE
FOR DISORDERS OF THE GENITO-URINARY TRACT.

By JOHN AULDE, M. D., Philadelphia, Pa.

Abstract from the *Medical Times and Register*, of Philadelphia, December 5, 1896.

About eight years ago I was very forcibly impressed with the clinical properties of hydrogen dioxide through its prompt action in a case of protracted gonorrhea. The patient had suffered for about three months, and notwithstanding the most earnest solicitations of several attendants the discharge had persisted. In addition to this, there was an orchitis present, the left testicle being about the size of a baseball. Treatment consisted of the local use of injections of equal parts of hydrogen dioxide and moderately warm water, used at intervals of four hours, these injections being followed by a solution of arsenite of copper containing one milligram (one 65th grain) to the drachm, diluted with an equal quantity of hot water.* The object of these injections was twofold: First, to cleanse the urethra by the destruction of micro-organisms, and second, to stimulate the functional activity of the epithelial cells, thus enabling them to resist the absorption of poisonous products. For the relief of the orchitis a suitable suspensory bandage was supplied, together with the local application of a stimulating ointment composed of mercury biniodide and lard, one part to ten. The ointment was applied at intervals of twenty-four hours for two or three times, when the swelling had perceptibly diminished and convalescence had begun.

In the course of a week this patient, who lived in a distant State, had so far recovered that he was able to return to his home, although he remained under treatment for a period of ten days, during which time the ointment was reapplied once. The discharge from the urethra had entirely ceased, pain had subsided and chordee had disappeared.

*See page 72.—When the urethra is very tender, Dr. Robert T. Morris recommends, that each injection should be preceded by cocaine or ether for the purpose of quieting the smarting.

The same method of treatment is equally efficacious in the treatment of non-specific urethritis and ordinary forms of gleet, but as hydrozone is so much more concentrated and perfectly harmless, it should be given the preference over medicinal hydrogen dioxide. This will be understood when the advantages of using hot solutions are taken into consideration. Hot solutions of either hydrogen dioxide or hydrozone quickly liberate the nascent oxygen and thus diminish the activity of our medication.

The value of this remedy is to be commended in the treatment of vaginitis and vaginismus; where hot solutions are especially indicated. Heretofore it has been the practice of physicians to recommend the employment of a hot vaginal douche, with or without some alkaline substance, such as sodium bicarbonate or boric acid, to be followed by a small quantity of medicinal Peroxide of Hydrogen combined with either warm or cold water; but with the increased volume of nascent oxygen contained in hydrozone a single application of the hot solution, one part to eight, will be found quite as effective. The patient should be taught how to employ the douche in order to obtain the best results. She should have a fountain syringe, in which the medicated solution is placed; it is then hung upon the wall at a distance of six feet from the floor and the patient sits upon a suitable vessel. The rubber tip of the hose is then introduced well back into the vaginal cavity, so as to avoid introducing the solution into the uterine cavity, and with the fingers of the disengaged hand the patient compresses the labiæ, allowing the medicated solution to distend the vaginal cavity, by which it is brought into contact with every portion of the diseased tissues. This plan should be repeated at least twice in twenty-four hours.

In the treatment of uterine disorders, where it is necessary to bring the medicated solution into contact with the lining membrane of the uterus, the patient should be placed in the recumbent position, with the hips well elevated as in the case of other uterine applications. An ordinary dilatation is then employed to distend the cervix, so as to permit the introduction of the nozzle of the syringe. The distension should be sufficient to permit the exit of the injected solution, or a suitable return-flow tube can be used instead. Certain precautions are necessary in making these applications, especially in chronic cases, because the effervescence attending the destruction of unhealthy mucus in the uterine cavity may be sufficient to drive a small portion of the debris into the Fallopian tubes. This danger, however, can be reduced to a minimum by the liberal use of the hot medicated solution and afterwards instructing the patient to sit up in bed. The pressure thus brought upon the uterus is sufficient to cause the discharge of all debris resulting from this application.

In this class of cases it is of the utmost importance that none of the vaginal secretions should be permitted to enter the uterine cavity, which can be avoided by having the patient take a preliminary vaginal douche, using the medicated solution. Where this cannot be accomplished, or seems unnecessary, the vaginal tract should be cleansed by the local use of the medicated solution after introducing the speculum.

A word of caution should be added in regard to the vaginal douche. Where the cervix is patulous and the patient takes the vaginal douche in the recumbent posture, using the precaution above described to insure the full distension of the vaginal cavity, a portion of the debris would almost certainly find its way into the cavity of the uterus, and with it probably more or less of the poison, and thus we have uterine disease superadded to the vaginal affection. Undoubtedly many cases of uterine disease have resulted from a failure to observe this precaution.

Diluted hydrozone will be found an efficient remedy for the relief of cystitis occurring either in the male or female. In chronic cases the amount of the solution (1 to 8) must be limited, owing to the thickening of the walls of the bladder and the pain resulting from the muscular contractions after the withdrawal of the solution. Gradually, however, the amount of the solution can be increased. In addition to the local treatment of cystitis and gleet, and sometimes in chronic cases of gonorrhea, much benefit will be derived from the internal administration of calcium sulphide, about one-tenth grain, at intervals of two hours.

SYPHILIS SUCCESSFULLY TREATED BY HYDRIATICS.

By ELMER LEE, A. M., M. D., Ph. B., New York.

Read in the Section on Dermatology and Syphilography at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5–8, 1896.

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There is, perhaps, no disease whose character is so black, and whose ravages are so universally distressing as that under consideration. The name syphilis strikes terror into the soul of its victim, and measureless uncertainty in the mind of the professional attendant upon whose shoulders the responsibility of treatment is placed.

The exact origin of syphilis is uncertain. The records do not clearly establish by whom or at what time in the history of the world the disease was first discovered. There has been much discussion concerning this point, but little satisfaction has resulted. It is the common habit of the Europeans to associate the disease with the return of the followers of Columbus, in 1493, from their discoveries of the West Indies. However, this may be, without the shadow of a doubt, the same disease must have existed centuries before among the races of the Orient. The first record of syphilis in France dates only to the siege of Naples, in 1494.

Syphilis is spread by direct contagion upon an abraded surface or a breach in an exposed membrane or tissue, and thereby, contaminating virus enters the system. A period of variable duration between the inception by contact and the lesion follows. It may be a few days, or it may be weeks before the systemic exhibitions appear. Two reasons may be assigned for the variability of incubation, viz.; the virility of the poison and the susceptibility of the individual. As in other diseases, there are some people insusceptible to syphilitic virus.

The precise nature of the infecting virus has eluded the researches of scientific processes of determination. It is an open question whether the serious poisoning which results is caused by a direct entrance of the contagion into the circulation, or whether it is by reason of the secondary absorption of the product of the initial ulcer. For my part it is not possible to decide the question, but fortunately the practical treatment of the disease does not depend upon this mooted point. The answer to the problem is, probably, that both influences together produce the result.

The first manifestation of syphilis appears in the form of macule or papule upon some mucous or skin surface. The lesion may extend quickly to the deeper tissues and viscera. During the period of healing of the initial lesion, the disease is regarded as in the first stage. The subsequent appearance of surface and other lesions constitute the second period of syphilis. If there are still subsequent exhibitions at some later time, usually measured by years, such a manifestation establishes the third period of the disease.

One invasion of the body generally precludes a second. The disease may be transmitted by the secretions of a sore upon any part of the body within and during the earlier stages. The power of transmission during the third period of the disease is regarded as unlikely, although there are some differences of opinion on this matter. It is, further, reasonably decided that the normal secretions of the body, such as saliva, mucus and other fluids do not transmit the disease. But in the first stage of syphilis the blood as well as the material from the initial lesion may infect another person.

Some investigators have asserted that a germ has been found constantly associated with the blood during the earlier stages of this disease, and that the microphite destroys both the white and red corpuscles. As in some other diseases, the symptoms of this are similar to those of certain other forms of toxemia. But it is undoubtedly true that syphilis is due to a definite and specific contagion. The blood is poisoned thereby, and a series of mild or severe disturbances of the health ensue in a somewhat regular order. The principal changes that occur, according to Virchow, begin by the production of a small-celled solid growth, which at first resembles granulation tissue, but

which soon shows a vesicular occlusion with consequent degeneration. This statement is, to me, one of the most important in the pathology of syphilis. If studied, according to the light of experience and analogy, it has the significant indication pointing out the requirements for treatment.

Variation in the caliber of the minutest channels through which the circulation is carried, forms the earliest pathologic manifestations in internal diseases. The recognition of this fact is of the greatest significance in the direction of a correct understanding of the truth concerning pathologic conditions. Alterations in the size of the vesicular spaces produce either congestion or hyperemia, either state producing destructive changes in the delicate cell structures. Should the disturbance in the circulation occur in the cells of a vital organ, the influence upon the whole body will be proportionately serious. If at the same time, the resisting power of the general system as well as the special locality in which the lesion occurs, should be of low vitality, great structural changes necessarily follow within short periods of time.

In the treatment of syphilis there is always one imperative indication, namely, sustaining the natural resisting forces against auto-infection. Upon the weakened and demoralized system, disease preys rapidly and furiously. It is more important to preserve the integrity of the individual cell, by supplying it with natural nutrition, and relieving it of the occlusions in its neighborhood, than it is to attempt to overwhelm the circulation by some extraneous and poisonous material with the view of neutralizing a virus of disease. It is a serious question whether an organic or inorganic chemic substance, pervading any part of the living tissue structures, is able to be neutralized by the introduction of another chemic agent. The various organic and inorganic drugs used for the treatment of syphilis are based upon the supposed property of a matter to destroy or antagonize another. It is easy to produce a definite reaction under favorable conditions in a physiologic or chemic laboratory when we know the exact nature of the materials with which the experiment is conducted; definite reactions, however, in living structures are not possible.

The influence upon the contagion which enters the circulation from without, by the fluids and solid elements of organized living tissues, cannot be definitely determined by scientific methods. Moreover, when a given mineral or vegetable reagent enters the stomach, and during its passage through the system, it is lost to the senses of the scientist, consequently whatever reactions there may be are determined by no reliable data. It was recently stated by a clinician who gives nearly all his time to the treatment of syphilitic manifestations, that up to the present moment, the materia medica offered but two agents with which to control the symptoms of this disease.

Fortunately, indeed, it would be did the materia medica possess so many as two remedies, which could, in truth, cure syphilis. Every physician whose experience has been even moderate, knows that mercury and iodid of potassium are not able to cure syphilis, all that may be said to the contrary notwithstanding. The philosophy of a cure of the impaired tissues, by further impairment of that tissue is allopathy, but it is not true to nature. It is necessary to do more than conform to a theory included within the confines of a name. Syphilis is not curable by the alleged principles of "allopathy," or the infinitesimal folly of "homeopathy," or by the vagaries of the "eclectics." If the disease is curable, the remedial forces of that inherent tendency for good which resides in every vegetable and animal cell are able, when properly aided, to conquer against its enemies.

By reference to one of the most recent reviews concerning the latest improved treatment of syphilis, the following remedies are advocated as essential: The list comprises blue pill, gray powder, gentian, quinin, iron, opium, alum, chlorate of potash, jalap, gamboge, epsom salts, green iodid of mercury, perchlorid of mercury, iodid of potassium, perchlorid of iron, red iodid of mercury, tannate of mercury, sarsaparilla, antimony, aromatics, iodid of sodium, iodid of ammonium, carbonate of ammonia, tartarated iron, bitter infusions, arsenic, iodid of mercury, iodoform, bromid of potassium, bromid of sodium, bromid of ammonium, strychnin, cod liver oil, mineral acids, vege-

table bitters, sulphur, calomel, black wash, carbolic acid, ointment of ammoniated mercury, ointment of oxid of zinc, mercurial ointment, mercurial vapor bath, borax, chromic acid, permanganate of potash, iodoform ointment and atropin.

Of this bewildering array of anti-syphilitic soldiers, how is the young doctor to discover who is general and which are privates? The life of a physician is too short to examine each remedy and calculate its value. The numerous remedies really constitute a disadvantage to the patient as well as the doctor. The choice of the materia medica will be determined very largely by the number of years since the date of graduation. The lectures emphatically encourage the necessary use of mercurials, and with this recommendation in mind, the young medical man feels consciously strong in his ability to treat syphilis. He is encouraged to think that while there is difference of opinion concerning the use of medicines in the treatment of whooping cough and measles, that the profession is a unity in its approval of mercurial treatment of syphilis, When a few cases have been entrusted by chance or some other influence to his care, doubts will come into his mind and his security will be sadly disturbed.

In what way is syphilis pathologically and radically different from other functional and organic diseases, that it may not be cured? There are conditions which we frequently see that are quite incurable, both in this and in other diseases. When the degenerate tendency becomes stronger than the resistance of the cells can endure, the natural termination of such cases is fatal. Other cases are incurable because of the utter wilfulness and disregard of reason by the patient.

The experiences of the profession clearly show that the natural termination of syphilis is toward recovery. The disease may be light or otherwise and in either case complete restoration often takes place, either with or without professional treatment. It would seem to show that if a single case of either mild or severe syphilis recovers without treatment, that the restoration is solely due to the principle of inherent preservation of cell integrity through a natural agency. My line of experience has taught forcibly the lesson that vitality maintained through physiologic and hygienic management is a scientific, a safe and satisfactory treatment of syphilis in the earlier stages. In the last stages, and when the forces of life are sadly weak and declining, it is worse than useless to hope for honest relief through the administration of organic and inororganic substances.

It is, perhaps, rash to controvert the position of the general profession in its attitude favoring the use of mercurials in the treatment of syphilis, and it would have been unnatural to an orthodox medical education, prior to the last third of my medical career. But it matters not, rash or otherwise, the only concern of the physician is to know the truth, and if syphilis can be successfully treated by hydriatics, is it not a worthy triumph? The treatment of syphilis by water as the principal remedial agent, is not so simple or so well known as the agent itself would seem to indicate. Neither is the method mysterious or devious. But it must be mastered, and experience will teach more than may be learned from a study of the brief literature on this subject.

My attention became attracted to hydriatics, as a successful method of treating syphilis, through the necessity of personal responsibility in the treatment of this disease. My position has been gained by actual clinical experience.

There came to my office in the spring of 1895, a negro, George F., age 25, single, waiter, who applied for relief on account of phimosis. The symptom which lead him to consult me was inordinate accumulation of smegma. Circumcision was done and the case disappeared from my observation. Perhaps a month later, the patient appeared again to exhibit an ulcer located on the dorsum, at the point where the division had been made. This ulcer was enormous before it healed and was characteristic in every particular. Finally it healed, and some weeks subsequent to its cicatrization, the negro returned with unmistakable secondary symptoms of syphilis. The rash was typical, the knees and ankles were swollen and painful, and the indications upon the exposed mucous membranes were indicative of contagion poisoning.

The treatment was instituted from the inception of the diagnosis. The case was seen by several experienced confrères, and the plan of management as outlined, was

watched by them as well as by myself. The agreement in diagnosis was emphatic. Water was the remedy prescribed in regulated doses to the extent of between two and three liters per day during a period of between eight and ten months. In each glassful of water some harmless dose of medicine was incorporated for the purpose of producing the desired mental effect upon the patient. The agent used for this purpose consisted, for the most part, of one or two drops of carbolic acid to six or eight ounces of water, which was altered in color each time the prescription was refilled. The dose from the bottle was a teaspoonful, to be mixed with the portion of water which was to be taken at definite intervals during the day. There was a period of two weeks, during the second month of the treatment of the disease, when the young man was unable to work on account of the unsightly appearance of his face and hands, as well as the general discomfort from which he suffered. The symptom which remained the longest was edema of the ankles. It has, however, entirely disappeared at this time. The symptom of next longest duration was the raised patches, some of which broke down, covering the unexposed surface of the body. The negro at this time is free from any discoverable lesion or symptom of syphilitic sequelæ. The skin is smooth and the discolorations have practically disappeared. The case has frequently been observed by several physicians, and at the last visit to my office, he was pronounced cured so far as symptoms could be discovered.

During the winter of 1894–95, a woman, Lizzie B., singles 26 years old, fair, a stenographer, presented an ulcerated throat. The case was not suspicious, and the ulceration was considered benign; simple treatment was begun. A few weeks later she complained of vesical hemorrhage. Examination revealed erosion of, and an ulcer upon the inner surface of the anterior lip of the cervix. The case was immediately suspected to be a contagious disease. At that time, no personal interrogation of her previous conduct took place; for a period of several weeks the case was observed and the diagnosis gradually and emphatically determined to be syphilitic. Soon after this determination, she was confined to her bed with fever, and during this time secondary eruptions manifested themselves in the form of papules. They broadened and extended over the whole body. The hair fell out in considerable quantity.

Her treatment, with the exception of local applications to the cervix, was directed in the same general line as in the preceding case. The patient, however, during all this period of treatment, which covered perhaps ten months, regularly added teaspoonful doses of the scented and colored water from the druggist's prescription bottle to the doses of water which were given her at stated intervals, and in sufficient quantity, during each day of the ten months.

In addition to internal hydriatics, the bowels were irrigated daily during a period of the first three months of treatment. Subsequent to that time, irrigation was performed at intervals of once each week. The recovery of this woman is satisfactory to herself, and no physical symptoms of syphilis can be found.

The local treatment consisted, principally, of Hydrozone applied in full strength to the chancres in each case. Hydrozone is selected amongst antiseptics, for the reason that it exceeds all others in rapid oxidation, with veritable destruction of microphites and putrid matter. In syphilitic treatment, the strongest antiseptic is most desirable, if at the same time, it is safe and effective. The surface eruptions on the body were anointed with Elixo, a liquid soap, which was rubbed in till it was dry, and allowed to remain until washed off at the bath the following day, to be again rubbed in as before; a substitute for blue ointment.

In conclusion, the heralded treatment of syphilis at water cures, such as Hot Springs, Ark., and other places of the same character, are, in my opinion, dependent upon the quantity of water which is used, internally and externally, and not upon the quality. Furthermore, the relief of the symptoms is dependent upon the large and regularly used internal hydriatics, and not upon the morbid effects produced by the mineral and vegetable materials which are administered in enormous and destructive doses. By reason of the preservation of the functions of the vital organs, through the

internal use of water and the external baths, nature withstands and permits the awful abuse to which it is subjected by the mercury and iodid of potassium that are imposed upon credulous patients.

PATHOLOGY AND TREATMENT OF INDOLENT ULCERS.

By DRS. P. N. RUSSELL, G. H. AIKEN and A. J. PEDLAR,
of Fresno, Cal.

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Read before the San Joaquin Valley Medical Society, October 28, 1896.

Anything which produces injury, irritation, or friction, may cause these ulcers. They are frequently associated with varicose veins. In treating the ulcer, the first requirement necessary to induce healing is to arrest the disintegration, and next, to make the ulcer assume a clean and healthy granulating surface. Support of the circulation was an important point. For this purpose he frequently curetted the surface and sometimes made radiating incisions through the indurated edges. After thoroughly cleansing the surface he next disinfected the cavity and then applied a simple ointment to the skin for a considerable distance around the ulcer, filling the excavation with iodoform. Over this he applied a piece of gutapercha tissue, in which numerous holes had been punched, and then a rubber bandage. This he regarded as the most important part of the treatment. It was applied carefully, including the foot, and going above the ulcer. Each case should be dressed, according to its condition, from every day to twice a week. The rubber bandage was removed on going to bed and reapplied on rising. The treatment was sometimes supplemented with an occasional mopping out of the ulcerated surface with hydrogen peroxide (Marchand's). In addition to local measures, the general condition should carefully be looked after, constitutional treatment being given if necessary.

Dr. G. H. Aiken, of Fresno: The general outline of the author's treatment is excellent. What we have to do is to convert the unhealthy, diseased condition to that of healthy tissue. Aside from that, when accomplished, we may have a large denuded surface requiring epithelium and new skin. How shall we best achieve this? I have tried several methods with bandaging and antiseptic dressings, but recently, with a severe and indolent ulcer from varicose veins, I adopted the following plan: The ulcer was about the size of a silver dollar, of a gray, dirty color, with indurated edges. I cleansed the parts with Peroxide of Hydrogen (Marchand's), which I find to be most effectual in destroying these necrosed conditions, and then dusted the surface with iodoform until it became a healthy granulating surface. How shall we heal these ulcers rapidly? I have found pyoktannin to be very effectual. I touch the whole surface with it, then apply white vaseline with campho-phenique; and over that iodoform gauze, and perhaps a little absorbent cotton, then bandage from the foot to the knee with an ordinary bandage. I allow the dressing to remain three or four days. It is astonishing to see the rapidity of cicatrization under the treatment. Each time when dressing, I apply the blue pencil.

Dr. A. J. Pedlar, of Fresno: I do not think I have found any one remedy that can be relied upon in these ulcers. In some cases I would get good results, and with the same treatment, fail in others. I have used protonuclein with benefit in chronic ulcers. Last summer, during the extreme heat, I treated a woman upwards of 60 years of age, and weighing about 200 pounds. She was doing her own house work, and in the almost incredible short time of two weeks I healed a large ulcer of the leg, which was troubling her for about two years. I cleansed the surface with Peroxide of Hydrogen (Marchand's) and applied protonuclein and absorbent cotton and bandaged above the swell of the calf. I have used it since, in the office, with good results.

LOCAL TREATMENT OF CHRONIC GASTRIC CATARRH—A CLINICAL LECTURE.

By J. M. G. CARTER, M. D., Sc. D., Ph. D.,

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Fellow of the American Academy of Medicine, etc.

(Reprint from the *American Therapist*, January, 1897.)

Local treatment may be applied in any stage of chronic gastric catarrh; but it must be varied somewhat in the different stages. The grade of inflammation, its character and persistence, likewise may require some modification of the treatment.

First stage.—During the incipiency of chronic gastritis, local treatment is not so essential, except in bacterial cases, but is beneficial. It serves to modify the congestion when that is increased, and often allays dyspeptic symptoms even when they are more marked than usual. The use of warm water (105) with bicarbonate of sodium (three per cent.) for washing out the stomach is frequently very valuable to remove the tenacious mucus usually adhering to the gastric mucous membrane, in this condition, and interfering with the proper mixing of peptic fluid with the food. The patient may drink a glassful of the solution before meals or it may be introduced into the stomach through the tube. If the tube is used, the stomach should be filled before allowing any reflow. The cold douche with water at 80° to 60° is sometimes more grateful and helpful than the hot douche (110° to 125°.) A continuous effect may be secured by using a double tube and permitting the inflow and outflow to progress simultaneously; but care should be taken to keep the stomach distended sufficiently to have the solution come in contact with the entire gastric surface. The soda solution dissolves the mucus and the stream washes it away. Weak soap-suds may be used with the tube for the same purpose. More satisfactory in many instances is the use of a solution of Hydrozone. A glassful (fl ℥ viii) of a two or three per cent. solution may be given half an hour before meals. If used as a douche with the tube a five or six per cent. solution is not too strong, and two quarts the minimum amount. These douchings may be given one to six or seven times a week, according to the requirements of the case, and are frequently all the treatment this stage of chronic gastritis demands, except what changes are necessary in the diet.

Second stage.—The inflammatory process is fully developed in the second stage and while there may be weeks or months when there is little if any suffering, the treatment should be persistent. The cleansing of the gastric mucous membrane must be systematic and thorough. This is best accomplished with a solution of green soap or a five or eight per cent. solution of Hydrozone, introduced with the double tube. After first filling the stomach, inflowing and outflowing streams ought to remain about equal or the outflow may exceed the inflow, the distention of the stomach may be maintained by retarding the reflow when necessary. This process can be beneficially accomplished by driving the solution into the stomach under increased air pressure; but when the proper apparatus for this method is not at hand the siphoning method with the single rube does very well. For home treatment or when the tube cannot for any reason be used a solution may be made for drinking. For this purpose a 2 or 3 per cent. solution of Hydrozone is prepared. The patient may take a glassful (8 oz.) half an hour before meal time. He should lie down at once, remain five minutes on the back, then turn on the right side where he must remain during the remainder of the half hour. While the patient is on the back the solution comes in contact with every portion of the gastric mucous membrane and turning to the right side facilitates the emptying of the stomach. By this process the offending mucus is dissolved and carried away and the organ is put into a proper condition to digest food. The use of Hydrozone has the additional advantage of checking the growth of the bacteria, and probably exhibits greater antiseptic properties than any other agent that can be used in the stomach with the same degree of safety. In obstinate cases this cleansing ought to precede every meal.

After the stomach is cleansed it should be treated with soothing, stimulating and healing applications. There are many preparations which can be so used, some of the best of which are glycerole of bismuth and eucalyptol, the essential oils and Glycozone. Boric acid in 2 or 3 per cent. solution as a wash with the tube is sometimes very valuable. The other agents mentioned may be used with a nebulizer by means of which a vapor impregnated with the medicines can be passed into the stomach through a tube, the double tube being preferable. If it is not convenient to use a nebulizing apparatus, the glycerole mentioned, and especially Glycozone, may be administered by the mouth. In many cases, in fact, the latter mode of administering these agents is more desirable. These remedies encourage healing and materially enhance the patient's prospects of recovery. This is especially true in bacterial cases. When Hydrozone has been given before meals as already suggested for cleansing purposes, Glycozone may be administered in teaspoonful doses after meals with very satisfactory results. This line of treatment is frequently so successful that cases are temporarily relieved and possibly often a cure effected, particularly if the general treatment has been judiciously carried out.

If, for any reason, Glycozone cannot be employed the essential oils may be used. The oils of anise, peppermint, cubebs, and tar may be combined and used with a nebulizer as previously suggested. Although benefit may be derived from the administration of this combination, I prefer Glycozone treatment. The use of hot water, 120° or more, and the employment of cold water, 80° to 40° (F.) may give very happy results in certain severe cases.

Third stage.—The condition referred to here is one of atrophy. The functions of absorption and motion may be fairly well performed. The chief difficulty then is with the digestion of proteids. The local treatment has two objects mainly, although a third is sometimes in mind. The first object is the removal of debris and foreign material. The second is the cleansing of the mucous membrane and the destruction of micro-organisms and their removal in order that the intestines may not receive bacterial products from the stomach. The third object sometimes kept in view in the local treatment by douching is a degree of stimulation of the functions of motion and absorption and the tonic effect to the gastric walls which follow those washings. The first object is accomplished by the use of sterilized water or a 3 per cent solution of sodium bicarbonate. Either tube may be used. The second object is effected by douching the walls with a green soap solution or a solution of Hydrozone. The latter agent in 5 per cent. solution as directed above gives very pleasing results. The third object may be secured by using hot or cold water for the douche.

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MECHANICAL FEEDING IN THE INSANE.

By FRANK C. HOYT, M. D., Clarinda, Iowa.

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Published by *The Medical Herald*, of St. Joseph, Mo., January, 1897.

In many forms of insanity, but particularly in cases of stuporous melancholia, and melancholia with extreme agitation, we find our patients suffering with gastric disorders, which require prompt and methodical treatment. These gastric derangements are usually to be classed as atonic dyspepsia, with hypersecretion, or chronic mucus gastritis, also attended by hypersecretion. In the latter condition we find that decomposition, with a consequent formation of gas, takes place; the decomposing food acts as a powerful irritant to the mucosa of the stomach, there is a corresponding increase of the muscular action of the sphincters; the resulting contraction causes a retention of

the decomposing food, while the gaseous distension seems to distend and paralyze the walls of the stomach. Patients so afflicted usually refuse food, not alone on account of their mental apathy, but because the ingestion of food causes pain and discomfort.

Where in ordinary cases we could safely treat the gastric disturbances systematically, and, to a certain extent, leisurely, yet in cases of alienation the destructive metabolism is so great as to force us to secure a restoration of the functions of the stomach as rapidly as possible. Rectal alimentation may be used in these cases, but for obvious reasons is very unsatisfactory. In common practice it has been the rule to permit the patients to take food—predigested, it is true—whenever they could be induced to do so, resorting to mechanical feeding only when necessary to introduce food.

This practice is erroneous, however, in my opinion, and I wish to advocate the use of the lavage tube and mechanical alimentation in all cases of insanity, in which there is established a diagnosis of atonic dyspepsia, or in fact any form of gastritis in which there is a retention of mucus or food, with consequent decomposition.

The plan of treatment I would outline as follows: Twice or three times daily the stomach should be thoroughly cleansed by a large volume of warm ozonized water, prepared by adding three ounces of Hydrozone (Marchand's) to one gallon of water. This should be poured into the stomach slowly, giving time for escape of gas through the tube, until the stomach is about one-third filled. The fluid, decomposing food, mucus, etc., should then be permitted to escape, and the same procedure repeated, until the fluid comes away clear and free from gas bubbles. Then empty the stomach completely, and introduce a proper amount of prepared food, such as malted milk. The opportunity may also be taken to administer such therapeutic agents as may be indicated, small doses of Glycozone seeming to favor a restoration of the normal function of the stomach.

In this connection, however, I wish to say that no greater mistake can be made in the treatment of these eases, than to crowd an already disabled stomach with food and medicine, before it is cleansed of its foul load of decomposing matter, and its mucosa put in a condition favorable to digestion and absorption. And I would also say that I know of no agent that equals Hydrozone for cleansing purposes.

A CASE OF TRAUMATIC SYNOVITIS OF THE KNEE—OPERATION—RECOVERY.[1]

By H. C. DALTON, M. D., St. Louis.

Reprinted from the *Medical Review*, of St. Louis, Mo., January 23, 1897.

September 27, 1894, I was called to see J. N. White, male, aged 7 years. Four days before my first visit, while running, he had fallen, striking his knee upon a rusty nail; a few hours after the injury, his knee became swollen and painful. Prior to my first visit, he was treated at home by a liberal use of Mustang liniment.

He had chills at irregular intervals; the mother thought that he had had fever for two or three days; the joint was excessively painful.

My patient was well nourished, but was very restless; face flushed and anxious; temperature 103.5° F.; pulse 112. He complained of constant pain in the knee,

1 Read before the Missouri State Medical Association, Sedalia, Mo., May, 1896.

greatly aggravated by attempt at movement. The joint was swollen, red, and edematous, measuring four inches more in circumference than its fellow; the patella was "floating," and over its middle point there was a small punctured wound, where the rusty nail had entered.

The leg was partly flexed upon the thigh, and it was evident that the joint contained a considerable quantity of fluid, which both the history and symptoms showed to be septic.

The patient was anesthetized, and under strict antiseptic precaution the joint was opened by making two vertical incisions, one on either side of the patella; these incisions were each 1½ inches in length, and opened the capsules throughout their extent. A large amount of pus, mixed with masses of flocculent lymph, was evacuated, and the cavity throughout washed out with warm sterilized water, followed by a 3 per cent solution of boric acid, and this by Peroxide of Hydrogen (Marchand's) full strength.

The synovial membrane was intensely congested, and there were numerous masses of lymph adherent to it. Upon attempting to remove some of these, slight bleeding was provoked. On the articular surface of the patella I could feel the roughened point where the nail had entered the joint. The patella had been pierced just about its middle point.

After a thorough cleansing, the joint was rather tightly packed with 10 per cent. iodoform gauze. The attempt was made to so place the gauze that the articular surfaces would be separated as much as possible. The ends of the gauze were brought out at the incisions, and an antiseptic dressing applied, after which the limb, slightly flexed at the knee, was put upon a long posterior splint; this was confined by a cotton bandage, and the whole covered by a crinoline bandage, snugly applied.

During the next 24 hours, the patient complained of the bandage being too tight, but as the foot did not swell, and the pain and discomfort were not very great, I did not remove it until the end of that time. His temperature was now 99.8° F , pulse 100. The pain and discomfort had now disappeared. The dressing being removed, the same method of irrigation was employed as above. There was a considerable amount of thin purulent discharge. A gauze drain was inserted into the joint through each opening, but no attempt was made to pack the joint.

The next day the discharge was very scanty, and had lost its purulent character. The joint was irrigated as before, but in dressing the wounds, gauze was placed in the external wounds only; 24 hours later there was no discharge, and no water could be forced into the joint, when an attempt was made to irrigate.

The dressing was changed daily for one week from date of operation, when an attempt at passive motion was carefully made. Movement of the joint was very painful, and the manipulation was followed by considerable pain and some swelling. This was treated with an evaporating lotion, composed of:

℞ Ether sulph., ℥ iij.
Liq. plumb. dil., ℥ xij.

The limb was again put upon the splint, and left at rest for three days, when a second attempt at motion was less painful, and was not followed by marked inflammatory reaction.

After this (10 days from date of operation) daily, careful and gentle, but persistent passive motion was kept up. Adhesions were numerous and pretty firm. On two or three occasions an anæsthetic was administered, in order to break them up thoroughly.

At the end of six weeks, the joint seemed to be well. Flexion and extension were perfect, and no pain or roughness could be elicited even upon rather rough handling. The joint now measured the same as its fellow, and the only evidence of former trouble was found in the scars.

I have given the history of this case somewhat in detail; not because of any novelty in the case itself, nor in its treatment. Punctured wounds of the knee-joints are not rare, and the principles underlying the treatment pursued are well known to all of you.

The fact that the wound was directly through the patella marks the only unusual feature of this case. In an older patient in whom ossification would be more advanced, the joint would probably have escaped altogether, or the bone would have been broken.

This case, and the result, show that thorough cleansing, followed by careful and persistent after treatment, offers a fair chance of perfect restoration, even in suppurating joints. The presence of a large amount of pus and an abundant exudation of fibrinous lymph did not interfere with the result in the case under consideration.

The essentials for success in these cases seem to me to be about as follows:

1. Early operation; this should not be delayed until the joint is widely distended with pus and probably partly disorganized. I think my patient would have made a more rapid recovery, and would certainly have given me less anxiety, had the operation been done 24 or 36 hours earlier. When I was called the joint was already fully distended, and must have been on the point of rupture. Rupture of the capsule, with extension of the suppuration into the periarticular structures, or among the deep muscles of the thigh, would probably have endangered his life, and certainly would have destroyed his chance for a useful joint.

2. Thorough irrigation and drainage. These are best obtained through large parallel incisions on either side of the patella, unless the process has extended beyond the joint, when counter-openings at dependent points may be desirable or necessary.

The choice of an irrigating fluid is not without importance, when we remember that the synovial membrane is less tolerant of irritation, either mechanical or chemical, than even the peritoneum. This fact prompted me to use only pure water and a boric acid solution for irrigation, depending upon the Peroxide of Hydrogen (Marchand's) for any needed antiseptic action. This agent in my hands has given excellent results in all abscess cavities, and I have never seen any bad effects, even when used upon the most delicate tissues.

After thorough cleansing, the question of drainage must be considered. In the case under discussion, iodoform gauze, tightly packed into the joint seems to have met the indications. The packing was done firmly and as thoroughly as possible. The object was twofold:

(*a.*) To make sure that no pockets were left to fill up with and retain septic material.

(*b.*) To separate as much as possible, the articular surfaces, and prevent the formation of adhesions at least to some extent. Of course, I knew that a complete separation of the synovial membrane at every point could not be accomplished, but I desired to do so, as far as possible.

3. The next essential to success, and of not less importance than the others in preserving the function of the joint, is early, persistent, but gentle passive motion. Passive motion should be begun early, but not persisted in, if gentle efforts in this direction cause much inflammatory action. In such cases, the limb should be left at rest for several days (the length of time to be determined by the severity of the symptoms), and the attempt again made. As soon as this tendency to reaction has disappeared we should be persistent in our efforts to break up existing adhesions, and to prevent the formation of fresh ones. Pain alone, at the time of making the movements, should not deter us. If necessary we should give an anæsthetic, as was done two or three times in this case.

It has not been very long since our text-books told us that a suppurating joint was a destroyed joint, and that the best plan was to open it freely, drain thoroughly, and place the limb in such position as would be most useful after anchylosis had occurred.

This case, and others which doubtless you can recall, show that the time has come in which we can hold out hope for a better result. Not every suppurating knee-joint, even if operated upon early and treated intelligently, can yet be saved in perfection of form and function; but the time is probably not far distant in which we shall be able to say that the great majority of such cases will recover with a functionally perfect limb.

CHRONIC GASTRITIS.

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Chronic gastritis, known also as gastric catarrh and chronic dyspepsia, is a disturbance of digestion depending upon alterations in the character of the gastric secretion.

The *causes* are numerous and varied in character, but all tend to one result—difficult and protracted digestion and formation of fermentative products. It may result from acute gastritis, though it is more liable to arise from indiscretions in diet, excessive addiction to tea, coffee, tobacco, or alcohol, irregular and hasty eating with insufficient insalivation and mastication, or from the habit of drinking ice-water or the use of iced foods during meals. It may occasionally arise as a reflex from rectal, prostatic or uterine irritation. Certain constitutional diseases as anæmia, chlorosis, tuberculosis, gout, nephritis, diabetes, and malarial cachexia may be attended or preceded by it. Frequently pulmonary phthisis or chronic interstitial nephritis may be heralded for months by gastric catarrh, long before the impending causal disease has been declared by its symptoms. Slow and inadequate digestion of food encourage the growth of the yeast plant, sarcina, and other elements of fermentation in the stomach, and thus give rise to irritation of the gastric mucosa. Portal obstruction, by causing engorgement of the gastric capillaries may retard digestion, and finally, through disturbance of the functions of the gastric tubules and resultant slow and feeble digestion permit the accumulation of sufficient provoking cause to bring on a chronic catarrh. It may be associated with certain local diseases of the stomach, such as cancer, ulceration and dilatation.

Pathologists recognize two forms of the disease: (1) the simple or common, and (2) the sclerotic. The simple form is attended by hypertrophy of the intertubular mucous membrane, while the second is attended by atrophy of the entire mucous membrane as well as of the secreting structures. The first is marked by profuse secretion of mucus, with restriction of the normal amount of gastric juice, the lining of the stomach being covered with a tenacious coating which mechanically and chemically interferes with normal chylification; while the second is characterized by dryness or lack of secretion not only of gastric juice, but of mucus, the organ being dilated, its walls thinned and atrophied, with fatty degeneration of its glandular elements. In another sclerotic form (which is exceedingly rare) there is fibrous degeneration of the gastric walls, the muscular structure being thickened with fibrous growth.

In the common form removal of the tenacious gray mucous covering the interior surface of the stomach will reveal more or less alteration of structure in the mucous membrane, the amount and character depending upon the duration and severity of the disease. Œdematous spots, covered with granulations, ecchymoses, and more or less extensive areas of pigmentation are distributed over the surface. Thickening of the mucous membrane is prominent, especially about the pylorus, and this may be so extensive as to obstruct the opening, the stenosis resulting in gradual dilatation-gastrectasia. In some cases the submucous tissue is implicated, the thickening being attended by infiltration of the structure with migrating connective tissue cells and the development of adventitious fibrous growth which renders the walls firm and unwieldy, and interferes greatly with normal peristaltic action.

In long-standing cases, the mucous membrane of the pylorus and its immediate vicinity may be the seat of abrasions or superficial ulcers of circular shape, varying from half an inch to an inch in diameter, the intervening mucous membrane being reddened and œdematous. Minute plants of ulceration may appear scattered about over the entire

mucous surface, marking the location of similarly affected solitary and lenticular glands. The inflammation usually extends to the duodenal mucous membrane. Dilatation of the stomach may attend some cases, and contraction of its walls others, as varying pathological changes predominate. Amyloid degeneration of the walls of the stomach may occur in advanced cases, secondary to waxy changes in the liver and spleen. Fatty infiltration of the tubules is sometimes detected under the microscope, and occasionally fatty degeneration of the intertubular structures.

Symptoms.—The symptoms are those of indigestion. Heartburn, associated with weight and fullness in the epigastric region follows eating, and continues for hours. Later on, there is actual pain, of a burning nature, attended by eructations of gases and fluids, and tenderness on pressure over the epigastrium. Darting pains radiate from the stomach into the pectoral region or backward toward the scapulæ, which may be aggravated by pressure. The tongue is often red, the papillæ being elevated and the tip pointed, though in other cases the general appearance of the organ may be normal. Craving for food (boulimnia) is a frequent symptom, this amounting to an almost constant, unsatisfied gnawing sensation in the epigastrium, though a small portion of food may satisfy it for a short time, during which the torments of difficult and painful digestion are experienced. A metallic taste is frequently present between periods of eating.

In aggravated cases vomiting is a frequent symptom, the material ejected consisting of partially digested food mixed with a large quantity of mucus containing sarcinæ ventriculi, torulæ, and varieties of bacilli and micrococci. The gastric juice is deficient and there are present lactic, butyric, or acetic acid, though in rare cases there may be excessive secretion of hydrochloric acid.

The bowels are usually constipated, though the reverse may be the case, undigested food then passing through the intestinal canal soon after it is swallowed (lientery).

Cardiac palpitation frequently attends the digestive process and the tumultuous throbbing may seem to be communicated to the sensitive stomach where the accumulated gases aggravate the difficulty, eructation affording only temporary relief. Stitching pains in the cardiac region may be present, and vertigo is not unfrequently associated with it.

A dry cough, termed "stomach cough," is often present, this probably being due to pharyngeal irritation, and partly to voluntary efforts on the part of the patient in seeking relief from præcordial oppression and epigastric discomfort.

Among the general symptoms are headache, languor, melancholia, and emaciation. Where atrophic conditions of the gastric tubules are present, anæmia is a prominent symptom.

Diagnosis.—The use of the stomach-tube will afford the best means of diagnosis. If siphonage be practised an hour or so after eating, hydrochloric acid will usually be absent, and lactic acid, associated with fatty acids are present with a large quantity of mucus. If siphonage be practised seven hours after eating, undigested food will be found still remaining in the stomach while in cases of functional dyspepsia it will have disappeared. Malignant disease will be excluded by lack of cachexia, absence of perceptible tumor upon palpation, and by the character of the material vomited, coffee-ground material soon appearing in cancer. In gastric ulcer, a diagnostic feature is frequent hematemesis.

Prognosis.—Chronic gastritis will usually improve readily under rational treatment unless there be associated with it gastric ulcer, cancer, gastrectasia, or organic, hepatic, renal, or pulmonary disease. When neglected it may continue for years and eventually terminate in ulcer or pyloric stenosis with resultant perforation or dilatation. A sympathetic disease of the supra-renal capsules is not an unfrequent complication, the supra-renal bodies seeming to sustain a peculiar relation to gastric irritation. The marked emaciation which attends long-continued cases renders the patient susceptible to attacks of acute disease and he is liable to succumb suddenly to some attack of this kind, to hematemesis, or to the immediate results of pyloric stricture.

Treatment.—An important part of treatment is the abandonment, so far as possible, of all exciting or perpetuating causes. If the subject has been in the habit of using alcoholic liquors, he should do away with them at once and forever. As a substitute, three parts of Howe's viburnum cordial and one part of specific avena sativa should be combined and resource be had to the mixture in acceptable doses repeated until all depression and craving for the accustomed stimulant have passed away. Ice-water or iced drinks, or foods should be dispensed with warm, foods and drinks of bland and digestible character being indicated, and over eating and the use of objectionable food should be avoided. The patient should restrict himself to small quantities of judiciously selected foods, taken at more frequent periods than in health and masticated slowly. Fats and carbo-hydrates should be generally avoided, and complete abstinence from pastries, griddle-cakes, fried foods, cheese, pickles, and tea and coffee should be observed.

Sometimes, when there is nephritic or cardiac complication (and even in severe cases without complication), a milk diet adhered to strictly for several weeks will afford the best results. In order to prevent the formation of hard curds the milk should be diluted with soda-water, lime-water, or other alkaline fluids. If the stomach is very weak, the cream should be removed from the milk before it is taken. Buttermilk is allowable, and from one to three quarts of this or milk may be taken during the twenty-four hours, but given in small quantities and frequently.

When milk does not sustain the strength (though such cases will be rare), underdone beef, or, what is better, raw, scraped beef, may be allowed in connection with it, one or two ounces at a time, two or three times a day being sufficient, though the amount may be increased as the patient's ability to digest food improves. Broths and soups should be avoided, and tea, coffee, and cocoa should be taken sparingly and without milk or sugar. Oysters, raw, broiled or panned are allowable and also stale bread with but little butter. Where there is an excessive amount of hydrochloric acid secreted rare roast beef, rare steaks, or the breast of chicken eaten with stale bread are best. Eggs should be thoroughly cooked for such persons, and will then be well tolerated. If an egg be boiled for an hour, the yolk, with a little salt added, will agree with the most delicate stomach. Where there is a strong tendency for food to undergo decomposition in the stomach, salted and smoked meats and fish may sometimes agree better than other articles of diet. Here, cream-codfish, dried beef, jerked venison, caviare, etc., may be carefully tried in succession, in small quantities, that the diet may be varied. Cured meats may be employed for the manufacture of cream gravy to be eaten on toast or stale bread, the solid part being rejected.

Saccharine, starchy, and farinaceous foods are almost certain to undergo lactic and butyric acid fermentation in the stomach before their digestion can be completed, producing flatulency. A person afflicted with chronic gastritis should endeavor to live carefully and abstemiously after recovery, throughout his life, as it is not a difficult matter to provoke a return of the disease. During treatment, business cares and all other responsibilities should be avoided, that no expenditure of energy may be made in an unnecessary direction, neither physical nor mental exertion being conducive to improvement. The case of Louis Cornaro, the Venetian, is not to be forgotten in this connection, for it illustrates the remarkable effect of careful living upon those almost hopelessly afflicted.

Though my information does not justify me in asserting that he was a sufferer from chronic gastritis, the narrative at least suggests such a condition. Possessed of the means, he abandoned himself to high and prodigal living but a weak constitution, broken down at the age of thirty-five, from excess, rendered life a burden to him. The next five years were passed in almost constant misery, and at the age of forty, his physician informed him that nothing could prolong his life more than two or three years and temperate habits were advised as the means to relieve his suffering during that time. He now began to gradually reduce his amount of food, both liquid and solid, until he at length only took what nature absolutely required. This, according to his own state-

ment, was a difficult course to pursue, and he often relapsed to over-eating; but he finally succeeded (within a year) in adopting permanently a spare and moderate system, and was already restored to perfect health.

Being now an enthusiast, he proceeded from moderation to abstemiousness, and diminished his daily allowance until the yolk of an egg sufficed him for a meal. Health and spirits improved, and he soon became able to derive more pleasure from a small meal of dry bread than the most tempting viands of a richly laden table had afforded him in his days of excesses. Such a course, persevered in, with the avoidance of extremes of heat and cold, enabled him, after almost ending his life at thirty-five, to recuperate and become a centenarian.

The constant and prolonged fermentation is the principal cause of perpetuation of the disease and the cleansing of the stomach of mucus and fermentative products is the direct way out of the difficulty. Modern times have afforded us superior advantages in this respect and there is now little difficulty in curing uncomplicated cases of chronic gastritis, even of long standing. If complications exist they should be removed if possible, and the problem then becomes clear. The tenacious mucus, which serves as a nidus for fermentative products must be removed and the interior of the stomach kept cleansed, when little other treatment, except a proper regime, is required. We possess two effective measures for this purpose, which may be employed singly or combined. **I refer to (1) lavage and (2) disinfection and cleansing with hydrozone.**

Lavage is an efficient means of cleansing the stomachal cavity. It is performed by the aid of an elongated soft-rubber tube to one extremity of which is attached a glass funnel. Dealers in rubber goods furnish these tubes upon application with open lower end, fenestrated sides, and raised ridge to indicate the point of sufficient introduction, this being at the lips when the tube is *in situ*. In order to introduce the tube, it is first coiled in a bowl containing cold or warm milk according to the preference of the patient, and the fenestrated extremity is then passed over the protruded tongue into the lower part of the pharynx, the patient assisting its onward motion by efforts at swallowing accompanied by deep inspirations. Steady pushing will now carry the instrument into the œsophagus and it will glide easily along until the lower end passes into the stomach, when the funnel should be affixed. It may be necessary for the physician to assist in the introduction for four or five times, after which the patient will be able to attend to it for himself. After initiation, the patient holds the funnel in the left hand and a flask of the fluid to be used in the right, fills the funnel and raises it above his head, when the contents flow into the stomach (irrigation). The funnel is immediately depressed below the level of the stomach, when the principle of siphonage operates to withdraw the liquid contents, which are allowed to flow into a pail placed between the patient's feet. Lavage is therefore divided into two stages, viz., irrigation and siphonage.

Reflex irritation producing nausea and vomiting with dyspnoea, which may attend the beginning of this measure, may usually be quieted by the administration of a single dose of twenty grains of bromide of potassium, taken an hour or so beforehand. Where the presence of the tube in the stomach provokes vomiting, the immediate introduction of a little fluid to remove the gastric surface from contact with the extremity of the tube will be sufficient, usually, to quiet the reflex.

The amount of fluid to be used at a time should be small at first, as vomiting is easily excited, and until the stomach becomes used to the measure, a pint will be sufficient. As treatment progresses, however, one, two, or three quarts may be used at a time without inconvenience, and this should be repeated each morning before eating.

The solutions should be warm (98.5 F. or thereabout), and consist of simple alkaline solutions, a drachm and a half of Glauber's salt to a quart of water constituting a popular fluid for the purpose. I find weak solutions of asepsin excellent, and have used boracic acid as a medicament with satisfaction. Long-standing cases of uncomplicated chronic gastritis recover completely in a few months on this treatment without the assistance of other measures except proper attention to dieting. Mucus and re-

tained fermentative elements and products are thus removed, and the mucous membrane is aroused to normal action, the hyperæmia subsides, and the irritated surface returns to a healthy condition.

The introduction of *hydrozone* as a remedy in this condition was an innovation of remarkable value. A drachm of Hydrozone, added to four ounces of boiled water, and drunk while the stomach is empty exerts a powerful influence in dissolving and removing the tenacious mucus, destroying microbic elements of fermentation and stimulating normal action in the diseased mucous surface. The best results follow its use in the morning before breakfast, the patient taking it while in bed and remaining on the left side for ten minutes before rising. It may be taken oftener but once a day will suffice and it may be advantageously used in this manner after the practice of lavage.

The Hydrozone may at first produce acrid sensations in the stomach and the patient may complain of an unpleasant taste following its action, but as the irritated gastric surface improves in tone under its influence, this will pass away, and sensitiveness to its action will subside. Where necessary the amount of Hydrozone may be reduced, until the stomach becomes more tolerant to it.

The important step in chronic gastric catarrh, as in catarrh of all other mucous cavities, is the cleansing of the part from the ropy mucus, which clogs the glandular organs, and serves as a nidus for the operation of agents of fermentation. Glycozone may sometimes be preferred, glycerine possessing individual virtue in certain cases of indigestion with fermentation.

With attention to such details, little more is necessary in the treatment of this disease. Some advise, in the absence or lack of the normal amount of hydrochloric acid, that this drug be given in suitable doses, well diluted with water. Benefit may sometimes follow this measure, but with the removal of morbid accumulations a normal amount of hydrochloric acid will soon be provided by nature. The efficiency of bitter tonics is doubtful, though some of them may specifically improve the recuperative forces of the gastric mucous membrane, and aid in a restoration to normal conditions. I believe berberis aquifolium to be one of these, its beneficial influence in catarrh of the mucous membrane generally adapting it here, while it is an acknowledged stomachic of superior virtue. Ten-drop doses of a reliable fluid preparation, repeated thrice daily, will often assist materially in restoring a normal condition of the gastric mucous membrane and digestive glands, aiding digestion, banishing boulimnia, and promoting a normal appetite.

When the catarrhal accumulation is a marked feature and there is a yellow coating on the tongue, bichromate of potassium in minute doses (two or three grains of the 3x), repeated three or four times daily, will usually assist the local treatment. Nux vomica may relieve some of the local unpleasantness, and there are those who assert that it specifically ameliorates the catarrhal condition. The dose should be minute. Hydrastis, pulsatilla, robinia, antimonium, bismuth, both the subnitrate and the liquor, and many other remedies, have their advocates.

In anæmic persons, where catarrhal tendencies are strong, calcium phos. 3x, in two or three grain doses repeated three or four times a day will lessen the ropy secretion. Protonuclein is another drug which promises much as a restorative.

Where chronic gastritis attends malarial cachexia that group of remedies which tends toward lessening the pressure in the radicals of the portal vein, will be efficient in relieving the congestion of the gastric mucosa. Of the four principal ones—polymnia, ceanothus, carduus, and grindelia squarrosa–grindelia squarrosa is my favorite. Improvement in digestion, under favorable circumstances, almost invariably follows its use. From five to ten drops of a satuarated tincture of the genuine plant, administered in a swallow of water, and repeated three times a day, insures marked benefit within a few days.

Sometimes we may be urged to administer agents for the relief of cardiac palpitation and associate gastric distress. Cactus grandiflorus and pulsatilla established a reputation with us for this purpose, before our old-school friends discovered their virtues, and they will occasionally answer us still. The best remedy I have ever tried, however, is a saturated tincture of aplopappus laricifolius, in from two to ten drop doses, one or two doses sufficing at a time. It calms erythism of the sympathetic nervous system, promotes rest, strengthens cardiac action, and lessens pain, relieves præcordial oppression, promotes evacuation of the bowels, and favors digestion. Minute doses of aconite and rhus tox are not to be despised for this condition, this reliable gastric sedative combination being very serviceable in some cases of chronic irritation.

Where constipation is present, enemata will be found preferable to laxative medicines, the salt-water galvanic enema being an excellent aid in stubborn cases, it not being necessary to repeat it more than once or twice a week. The positive pole should be applied with a moistened sponge over the espigastrium.

Local applications over the espigastrium are sometimes of service, and should be tried in intractable cases. The compound tar plaster of our forefathers, worn over the espigastrium until pustulation begins, then removed for a few days and its use repeated again and again, to perpetuate a superficial irritation, has many able advocates, and I have known it to effect most excellent results. A vinegar pack or girdle worn upon the epigastrium is hardly less effective. Equal parts of strong vinegar and water may be employed to moisten an epigastric pad which should be wrung as dry as possible two or three times within the twenty-four hours and worn constantly, the clothing being protected by an oiled silk covering.

As this disease is a long time in becoming established, it must be expected that several months will be required to effect a cure.

A CASE OF LUPUS OF SIX YEARS' STANDING.

By TRUMAN SEXSMITH, M. D..

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(Reprinted from *The Medical Brief*, for April, 1897.)

The patient is a male, aged fifty-eight years. When he applied for treatment he was completely run down both mentally and physically. The ulcer, which was situated at the corner of the left eye (involving both upper and lower lid), was a little larger than a dime. He had consulted several physicians, and the only encouragement was the knife.

By the advice of Dr. Geo. Monroe, of San Francisco, Cal., I concluded to try chromic acid, which was applied, the eye being protected by vaseline. On the third day it was again applied with cocaine to relieve pain. This application was attended with greatly increased inflammation and swelling of the whole side of the face. The acid was re-applied on the fifth day. In the meantime, the ulcer was washed out four times daily with Marchand's Hydrozone, full strength, and a compress of carbolized cotton soaked with Glycozone was applied each night. The patient was given Arsenauro in

six-drop doses in a wine-glass of water, half hour after eating. In two weeks the dose was increased to ten drops. This treatment was continued for six months. In one month the ulcer healed, leaving a soft, flexible cicatrix with only slight inversion of the under lid.

It is now more than a year, and the patient has increased in weight from one hundred and twenty pounds to one hundred and fifty-six pounds; general health seems perfect. Only slight weakness of the eye complained of, caused partly by intense sunshine of this climate.

ESSENTIAL REQUIREMENTS OF A MODERN ANTISEPTIC.

By ROBERT C. KENNER, A. M., M. D., Louisville, Ky.

(Reprinted from *The New Albany Medical Herald*, for April, 1897.)

Seventeen years ago the entire world was aglow with the strides made in the domain of surgery by the introduction of antiseptics. It caused many good surgeons to believe that surgery would have an entirely new future. But now, after a thorough trial, antiseptics have come to be considered in their true light. We have come to regard antiseptics as indispensable, and their field of usefulness is clearly understood by the profession. When antiseptic surgery first was advocated by Sir Joseph Lister, he held many views which he soon abandoned as worthless. He operated under a carbolic acid spray. This he soon found to be useless, and he did not long depend upon carbolic acid as an antiseptic. In order to bring out the central idea of this paper—the requirements of a modern antiseptic—let me go over the most prominent antiseptics which have claimed the attention of the profession. The first antiseptic which in recent times gained the confidence of the profession was carbolic acid. This agent, from the fact that it was the one used by Lister, came to be depended upon all over the world. Its reign of favor however did not last long, as it soon came to be found to be an irritant and a poison, capable of doing a great deal of harm. When large surfaces were treated with carbolic solutions often patients died of carbolic acid intoxication. It is impossible, in many cases, to prevent a result like this, and many surgeons can give some sad experience along this line. Again, when all danger of causing carbolic acid poisoning was rendered impossible, it has been found that the agent was an irritant to such a degree that wounds were rendered unhealthy or made to heal more slowly than when they received no antiseptic at all. Again, it was demonstrated by a great many investigators that carbolic acid was not fatal to many pathogenic bacteria, and, therefore, the agent has come to be laid aside as far as any of the purposes of a modern surgical antiseptic are concerned. After carbolic acid had come to occupy this place, we find corrosive sublimate to have gained a most widespread acceptance at the hands of the profession. This widespread acceptance is due to the fact that corrosive sublimate is positively fatal to many and most all of pathogenic bacteria. Over a hundred years ago Pringle, in an array of tests to demonstrate the value of antiseptics, found that carbolic acid would more quickly prevent or deter sepsis than any other agent. Pringle's work, however, was on other lines than ours. Yet he found out much that has since his day been rediscovered. Corrosive sublimate to-day may be said to be on the decline. In fact, few well informed surgeons will now employ it at all. The reason for the decline of carbolic acid in favor is that it is very poisonous and a most potent irritant. Possibly no drug is a greater irritant. One of the first things which caused corrosive sublimate to begin to decline was the fact that one of the leading surgeons pointed out that it would, when brought in contact with divided tissue, form an albuminate over all the surface of the wound, and that this would prevent the healing by the first intention, and very often it would cause suppuration in certain places where, if no antiseptic was employed at all, we need have care, too, in using corrosive sublimate that we do not allow it to be used over

extensive surfaces. If there is but a small amount absorbed, we shall find our patient with symptoms of poisoning. Again, in employing corrosive sublimate, it is necessary to bear in mind that it is easy to get it too strong. Many serious accidents occur from this cause. Again, when we use corrosive sublimate, we will find that it cannot be used with safety as a spray. For these reasons corrosive sublimate is a most dangerous antiseptic, and its going into disuse is for the good of the profession.

Iodoform has been long popular, but is now being relegated to the shades of disuse. This is so because this drug has a most disagreeable and a most reproachful odor, and it also produces many cases of poisoning. For these reasons iodoform has gone practically out of employment. But iodoform is a powder, and cannot be brought into a solution, and, therefore, should it be non-poisonous, it would not be applicable in a large number of cases.

But the requirements of the modern medical man for an antiseptic is not supplied, as we have seen, in any of the agents of which we have spoken. We have in Hydrozone the strongest antiseptic known to the medical profession, and it is now employed extensively by the profession. It is three times the strength of Peroxide of Hydrogen, the U. S. P. officinal, and it is in no sense an irritant or a poison. It can be taken internally, as in cases of gastric catarrh and dyspepsia due to fermentation, and as an intestinal antiseptic without the slightest danger of producing poisonous results, or without the least danger of producing irritation. One of the greatest sources of benefit which we derive from this agent is the antiseptic effect which it produces in throat diseases. Hydrozone, diluted with half its quantity of water, we find the best remedy for tonsillitis. This sprayed against the tonsils when an attack is in its incipiency will in every case abort it. It should be sprayed thoroughly against the tonsils every fifteen minutes or half an hour until the pain and difficulty of swallowing has been dissipated. But this need not be continued longer than four hours with this frequency. After that every two hours will suffice, and generally not more than six or eight hours are necessary to effect a cure of tonsillitis. But the best effects of Hydrozone will be seen in diphtheria. Here its employment will bring us good results by rendering the parts antiseptic and limiting the affection. It is claimed by the best observers that if the nose is sprayed in attacks of diphtheria we will have no false membrane in the nose.

But this is not all. As an injection in the strength given above, it is the best injection in leucorrhea and gonorrhea in females. It is above all remedies for the cleansing out of abscess cavities. It will never cease to bubble as long as there is any pus in the cavity. In nasal catarrh, in ozena and all inflammation of the mucous membranes its action is that of a pure antiseptic. In other words, it begets absolute cleanliness, and destroys all pathogenic germs, and renders in the diseased structure an absolutely healthy condition.

No remedy equals it in carbuncles. Here it destroys the pus and core, and causes the diseased structure to take on a healthy action.

We may, therefore, not hesitate to claim that this antiseptic meets the demands of the physician and surgeon more nearly than any other agent of its class at their disposal.

GLYCOZONE IN CHRONIC CATARRH OF THE STOMACH.

By J. W. STARR, M. D., of Chariton, Ia.

(Reprinted from the *Lancet*, April, 1897.)

In October, 1896, my attention was called to the value of Glycozone in chronic catarrh of the stomach. Having at that time three typical cases (two males and one female) I began the use of Glycozone, giving it in the proportion of one teaspoonful in a wineglassful of water. At first one of the patients experienced a peculiar uneasy sensation in the stomach directly after taking the remedy, but this was of short duration

with no particularly unpleasant nor bad effects in any manner. The appetite became more regular, the feeling of distress so common in such cases gradually subsided and the pains became of trifling severity.

The cardialgia in a short time was entirely relieved in two cases and greatly benefited in the third. The eructations of gas and gaseous distention of the intestines were relieved in a short time. In all the cases digestion appeared to become more energetic and a general improvement was very noticeable. The results obtained with the remedy have been most satisfactory to me and I consider it worthy of a still more careful and extended trial.

The reason so many fail to cure catarrh of the stomach is because they only prescribe to relieve the distressing symptoms instead of trying to reduce the inflammation in the stomach and subdue the existing pathological conditions. In order to accomplish the desired end the stomach must be treated with antiseptic remedies, the majority of which are too strong and in many cases they only tend to aggravate the disease.

The first indication then would be to destroy the morbid elements of the stomach, and second to heal the inflamed lining membrane after the first was accomplished.

If the antiseptic theory be correct, we would then begin to look about for an antiseptic remedy that would not act as a chemical irritant to the stomach, and at the same time secure one that would be a good cleansing agent, if possible to do so, and to meet this end I look upon Glycozone as being the best available remedy at the present time to meet all the demands of such an agent, for by prescribing it diluted with water we may get the mechanical as well as the chemical effect of the remedy on the lining membrane of the stomach.

In treating nasal catarrh, pharyngitis, and like diseases of the mucous membrane, I look upon Hydrozone and Glycozone as being indispensable.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.

By SETH SCOTT BISHOP, M. D., LL. D., of Chicago, Ill.

Professor in the Post-Graduate Medical School and Hospital of Chicago; Professor of Diseases of the Nose, Throat and Ear in the Illinois Medical College, etc.

(Abstract from *Louisville Medical Monthly*, June, 1897.)

The diversity of opinion relative to the advisability of irrigating the ear in suppurative conditions of the tympanic cavity is something worthy of remark. Some very excellent otologists disapprove of the practice. With others it is the common practice to syringe suppurating ears with the solution of bichloride of mercury—1 to 5,000—in the beginning of treatment, at least, and even during the course of treatment.

Believing that the most thorough cleanliness is absolutely essential to a cure of suppurating ears, we begin the treatment by having them syringed with the sublimate solution as warm as can be borne with comfort, using at least a quart at a time with a continuous flow syringe.

Inflation is then practiced with antiseptic vapors like camphor-menthol in a 10 per cent. solution. The discharges that inflation may project into the meatus are then removed with cotton.

The next step is to fill the ear with warmed Peroxide of Hydrogen. I have seen it claimed that warming this remedy would deprive it of its potency, but I have employed it in this manner for years without observing such a result. In a private letter from so eminent an authority as Charles Marchand, he says:

"I received a letter from Dr. J. F. Burkholder a few days ago, in which he states that you had an argument with some doctors who claimed that when Hydrozone is heated at a temperature of 102° to 110° F. it loses its strength. This is perfectly absurd. When Hydrozone is heated at that temperature in a glass container it does not lose any of its strength, and that is the proper way to use it in case of mastoid abscess and suppurative conditions of the middle ear."

The Peroxide is left in the ear as long as effervescence continues. This decomposes pus, liberates oxygen, destroys bacteria and effectually cleanses the cavity. * * *

THE CARE OF THE INSANE IN PRIVATE PRACTICE.

By DR. HENRY W. COE, Portland, Ore.

(Abstract from *The Journal of the American Medical Association*, March 6, 1897.)

Dr. H. W. Coe says: "There is no more prolific source of insanity than auto-infection, and to meet this condition, Bouchard calls attention to the necessity of a carefully selected diet and the free operation of all the emunctories. Salines he especially recommends, and I can testify as to their value. Intestinal antisepsis should be a feature in nearly every case, and the agent employed for this purpose should be such as shall not interfere with normal digestion and yet be powerful enough to destroy the micro-organisms which are doing the mischief and to neutralize the ptomaines already present in the tract. My own experience accords with that of Dr. John Aulde and Dr. G. M. Blech, the Peroxide of Hydrogen is a most satisfactory agent for intestinal disinfection. Dr. Aulde uses a three per cent. and Dr. Blech a two per cent. solution of Hydrozone in water, from two to eight ounces of this mixture being taken a half hour before meals. I have made use of this method with pleasant results, and in cases where there has been much gastric fermentation I have employed an additional ozonized solution, Glycozone, a teaspoonful immediately following meals. The glyc erine which is the menstruum in this latter solution, acts as a mild stimulant to theointestinal glands, thereby accelerating the excretory functions of the tract. I have w ndered if a little of the good effects from the use of a powerful static machine, which I have noticed in several cases of mental trouble was not due to the general effect from the inhalation of liberal quantities of ozone from the atmosphere in which the patient has been enveloped during the use of the breeze. Dr. Riggs and many other writers are enthusiastic over the use of the static current in the treatment of insanity. Dr. Gray believes that the ozone from the static breeze accounts for much of its benefits in hysteria, and why not also in insanity?"

ENTERO-COLITIS OF INFANCY.*

By M. A. CLARK, A. M., M. D., Macon, Ga.

(Abstract from *The Atlanta Medical and Surgical Journal*, June, 1897.)

* * * Bismuth is the remedy *par excellence* when there is much tympanites. With regard to bismuth let me remark that we are often disappointed in its results because we give too small doses. I do not hesitate to give to a child of six months grains xx of the subnitrate every two hours when the stools are frequent and the bowels are tympanitic. The salicylate is recommended by some as being more antiseptic. I prefer the subnitrate, as I get better results from its use.

*Read before the Georgia Medical Association at Macon, April 21, 1897.

When the tannigen is pushed, it is rarely necessary to resort to the bismuth. Give it till the bowels are checked and then every four or six hours till the stools have resumed their natural color. Tannigen is both astringent and antiseptic, and will not only check the diarrhœa, but will also destroy the fermentative changes taking place in the bowels. I do not claim that it will cure every case, but I do claim that, if properly used, it will cure much more promptly than any other medicine.

If there is great pain, I add a little deodorized tincture of opium; but all opiates should be avoided if possible. It is better to allow the patient to suffer some pain than to be stupefied by opiates.

In connection with the foregoing medicines I wash out the bowels thoroughly two or three times daily with Hydrozone, 1 to 32 or 40. I use a fountain syringe with a soft rubber catheter, No 23 or 24 or even larger may be used. Hold the syringe just high enough above the patient to allow a gentle flow. If the fever is high, I use the water barely tepid, sometimes cool water is better, as it reduces the temperature more rapidly. For general use I have the water comfortably warm.

In irrigating the bowels do not be afraid to use plenty of water. Use it freely not only till the bowels move, but till the water returns clear, showing that the bowels are well cleansed. The water removes all fæcal matter and unhealthy mucus, and the Hydrozone destroys all sepsis and stimulates the intestine to a rapid return to its normal condition.

When there is constant griping and much tympanites, I use the irrigation oftener, every two or three hours, if necessary, to keep the patient comfortable.

Thus with tannigen, the ideal intestinal astringent; bismuth the reliable antacid; water, the great cleanser, and Hydrozone, the most potent antiseptic, with strict attention to diet and clothing, we may reasonably expect a majority of our cases to recover.

HYDROZONE AND GLYCOZONE IN GASTRIC CATARRH WITH NERVOUS SYMPTOMS.

By WARREN E. DAY, M. D., Prescott, Ariz.

(Reprinted from *The New England Medical Monthly*, August, 1897.)

Gastric catarrh with nervous complications is one of the most stubborn ailments that I know of. I may confess here, that as long as I used injurious or worthless drugs which are usually prescribed in order to subdue this disease, I never accomplished more than giving temporary relief to my patients.

Two years ago (although I am quite skeptical about new remedies) a hopeless case of gastric catarrh came under my care, and instead of resorting to the ordinary remedial agents, I gave up the routine and concluded to try Hydrozone and Glycozone, excluding all other drugs.

The results were so gratifying, that since that time I have used these remedies with wonderful results in not less than forty cases of gastric and intestinal diseases. Many of these cases were thought incurable, and I was called in as a last resort particularly in the case of Mr. L., who had given up all hope and nearly all desire to live. He could not eat nor retain food on his stomach. He had great difficulty in breathing, and had paroxysms of asthma, lasting for hours, did not dare to sleep, fearing death, kidneys and bowels deranged, legs and feet badly swollen, urine scant, fecal matter light color, bullet form and hard.

His relatives came in from Utah to see him for the last time, bury him of course. He had no wife nor children. I was called in by his orders as he had known me for twenty years, and my opinion of his case was needed to satisfy him. If I gave him no hope of relief, then he must go as he said. Physicians who had treated him before, had been paid and dismissed with his presumed blessing.

After a thorough examination the internal treatment prescribed was ozonized water and Glycozone with injections. No other drugs permitted. Bowels soon opened, and old accumulations gotten rid of; such food as his appetite craved for day and night was provided. For weeks prior to my being called, he had not laid in bed, but was propped up in a sitting posture with his clothing on and a nurse in constant attendance. After a few days treatment all the natural functions were greatly improved. His sleep returned naturally; he reclined in bed in proper position, the swelling decreasing in his limbs.

He had no difficulty in breathing and after five weeks treatment, he now goes about attending to his business, looking after his real estate and putting in no little time in giving me credit for his life.

The above is only one out of a score of bad cases, the cure of which was entirely due to the judicious use of Hydrozone and Glycozone prescribed as follows:

Fifteen minutes before meals, the patient took one tumblerful of ozonized water made of two per cent. of Hydrozone diluted with clear water (boiled water to be preferred). Immediately after meals two teaspoonfuls of Glycozone well diluted with water was given to the patient for three weeks, then reduced the dose to one teaspoonful.

In order to subdue the catarrhal inflammation of the bowels, I prescribed an enema to be taken every morning with 12 ounces of lukewarm water containing one ounce of Glycozone.

The results I obtained in prescribing the above are such, that I feel fully justified to recommend it as being the treatment "par excellence" in gastric and intestinal disorders.

PEROXIDE OF HYDROGEN IN MASTOID COMPLICATIONS.

By M. F. WEYMANN, M. D., St. Joseph, Mo.

Professor of Ophthalmology and Otology, Central Medical College.

(Reprinted from the *Medical Herald*, of St. Joseph, Mo., for July, 1897.)

Two years ago I was consulted by a little girl, of American parentage, about 14 years old, and to all appearances of good health, for an ear trouble. The parents were both strong and robust country people, and stated that the child had been equally fortunate in matters of physical well-being. There were traces of previous scrofulous trouble, such as Hutchison teeth, some enlargement of the submaxillary and cervical glands, and a tendency toward chronic catarrh. It was also remembered by the parents that she used to be in the habit, in her younger age, of breathing through her mouth.

Inspection at the time showed an acute pharyngitis in the stages of decline, but there were no adenoids perceptible, and both nares were free. There had been for some time discharge from the ears, but within a week it had ceased, shortly after the onset of the "cold in her head." The latter had come on with a great deal of fever and torturing ear-aches. Sedative instillations were ordered by the local physicians, but without success. The family finally became frightened by the appearance of mastoid swelling, and came to see me.

There was a doughy swelling over both mastoids, with tenderness on pressure. The auricles were pushed away from the head, and the tissues of the neck below the mastoid were thickly infiltrated and sensitive to palpation. *This was the case on both sides.* The auditory canal was very much narrowed through inflammatory swelling, although there was little discharge. The surfaces were dry, hot and red. Pressure over the tragus was unbearable; in fact, handling of the auricle caused intense suffering. The child was flushed in the face, the expression sleepy and stupor-like. There had also been vomiting on the preceding day. The case certainly looked serious and alarming, and I informed the mother that perhaps mastoid operations might become necessary, although I told them that I would wait another twenty-four hours. I ordered immediately

℞ Olei tiglii, gtt. j.
Sig. Take at once on a lump of sugar.

This was given both for the purpose of moving the bowels and as a revulsive, but especially for the latter purpose; and I must say that in many instances such revulsion has done better for me than actual bleeding. I also ordered some antipyretic, to at least somewhat reduce the fever, and finally I ordered hot cataplasms over both mastoids thirty minutes out of every hour, the surface to be so covered to be large, and the temperature of the cloths to be as *hot as possibly could be borne* without actually burning the skin.

Before allowing them to go from the office I syringed out the ears with warm boric acid lotion, and then instilled Peroxide of Hydrogen, full strength. Although there seemed to be no discharge, I could plainly hear the bubbling by laying my head upon the patient's ear. After thoroughly cleansing in this manner, I dismissed the patient with instructions to put on hot compresses thirty minutes, then keep Peroxide of Hydrogen in the ears for the other half hour, and so alternate without cessation during the whole night. There were perforations in both drums, and I should have ordered Valsalva inflations with the peroxide, if it had not been for the pain caused by the effort.

The next day my patient returned a different girl. Her fever was much lower, her expression was lively, she showed interest in things and persons, and the pain in the "head" had subsided. Even the mastoid swelling was reduced considerably. Of course, I now took a more hopeful view of the case, but continued the measures mentioned, and within five days every trace of mastoid swelling, cervical induration and tragus tenderness was gone. The discharge was more copious, but disappeared in about a month under ordinary treatment.

The correction of the mastoid complications was rather a surprise to me, and while I attributed it mainly to the peroxide, still I could not help thinking that revulsion and moist heat had their share. I made up my mind to find out for certain in the next case where the glory belonged.

Since then I have had quite a number of cases, and my observations have convinced me that Peroxide of Hydrogen is the most reliable of all remedies in mastoid trouble. I do not mean that it will cure *any* case, but I do mean to assert, that *at the beginning and in the early stages of mastoiditis it will work wonders.* Whenever there is, at the same time, evidence of tympanic trouble, as shown by tenderness over the tragus, it will abort mastoid complications almost with a certainty. This goes to show that retained discharge may cause mastoidal swelling without, however, causing permanent mischief. The moment the offensive secretions are removed the inflammatory tumefaction rights itself. I believe the timely use of H_2O_2 would prevent periosteal complications to such an extent that surgical work would be needed in very few instances.

In closing, I wish to state that care must be used in selecting the Peroxide of Hydrogen, there being many inferior commercial brands on the market. I invariably prescribe Marchand's medicinal Peroxide of Hydrogen or Hydrozone, both of these preparations being thoroughly stable and reliable.

AN ULCER RESULTING FROM ANTHRAX, AND ITS TREATMENT.

By J. OSBORNE DeCOURCY, M. D., St. Libory, Ill.

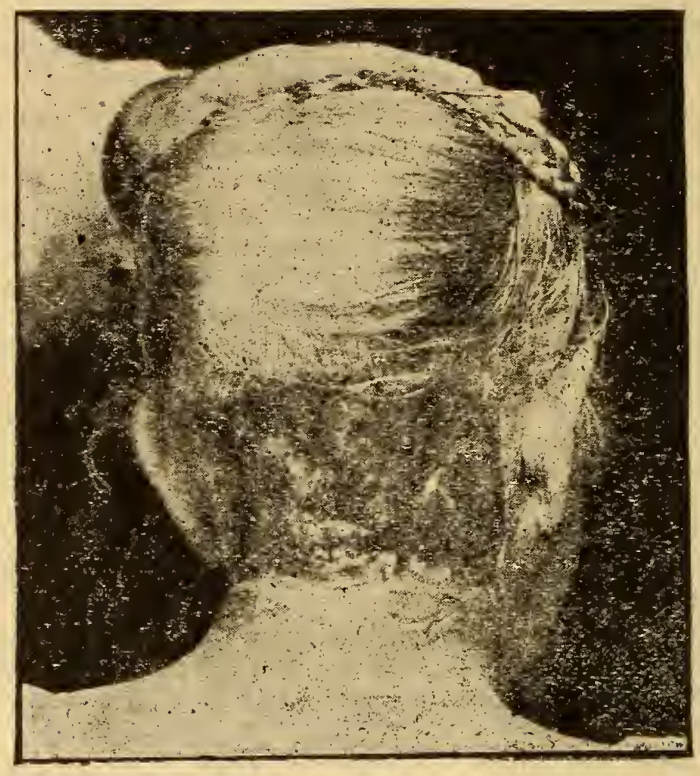
Secretary Southern Illinois Medical Association.

(Reprinted from the *New York Polyclinic* for August, 1897.)

The case came under my care July 26, 1895, with the following history.

Mrs. H. B., married, previous health good, family history negative.

Patient complained of not having been well for two weeks; back of the neck sore, red, swollen with a "hard cake" extending over the back of the neck from base to occiput and from ear to ear, very painful and constantly growing worse. To this trouble was added a profuse diarrhœa with fever. Had been dosed with wines, "family remedies," and patent nostrums, with various local applications.



Cut No. 1.

When first seen patient was excited, pulse quick and strong, temperature 101° F.

The fever behaved as the ordinary intermitting, and was so treated.

The usual agents were used to control the pain, to render the patient as comfortable as possible.

After two days, a great number of small pustules appeared over the swollen surface which were opened and through which there came a flow of pus.

The line of demarkation having been formed, the integument together with the underlying tissue was removed; the wound made clean and packed with boric acid and dressed, oiled silk being applied next to the surface.

Before the removal of the integument the discharge of pus was so constant and profuse that the wound was dressed two to three times a day.

It was indeed a ghastly sight as shown by Cut No. 1 which was not made until the beginning of granulation.

Hydrozone was used freely from the first appearance of pus and at each subsequent dressing, in sufficient quantity to destroy the pus and leave a clean surface.

In the meantime the fever was subdued and the pain which at first was so great, had come to be much less severe and the lady expressed herself as feeling fairly comfortable after the wound was dressed.

Skin grafting was done at three different times, but as the patient most of the time slept in the supine position, the grafts failed to take.

From the end of the third week Glycozone and Hydrozone were used alone as the local agents. The ulcer was then washed and dressed twice each day for four weeks.

Cut No. 2.

Lukewarm water was used per fountain syringe to wash the parts; Hydrozone then applied by means of a hard rubber syringe followed by Glycozone with a camel's hair pencil. A layer of surgical lint was saturated with Glycozone and applied to the parts, then one ply of dry lint extending well over the surface bound down by a gauze bandage.

A nutritious diet was recommended and the patient well fed during the following sixty days, at the end of which time the wound was practically well.

Granulations advanced rapidly from below upwards making slow progress from the occiput, and from either side. The result was a beautiful white skin with a very narrow cicatricial thickening extending across the neck just below the occiput as shown in Cut No. 2, which was made the 1st of November, about the ninety-fifth day after I first saw the case.

Convalescence was steady and uneventful from the first. The lady is still living and enjoying good health.

SUPPURATIVE NEPHRITIS.

REPORT OF A CASE.

By WILSON PETERSON, M. D., New York.

(Published by the *North American Journal of Homœopathy*, for September, 1897.)

Mrs. B. applied to me for treatment about three years ago for what I diagnosed as suppurative nephritis; all the symptoms pointing to this condition and the urine containing albumen, pus and blood. Her condition was very serious, and I had little if any hope of her recovery from the ordinary medication, but decided to try the effects of Peroxide of Hydrogen, believing that by its beneficial action upon the digestive organs, it might relieve the kidneys and soon help them to accomplish their functions.

I began by giving Peroxide of Hydrogen (medicinal) 15 volumes, in teaspoonful doses, diluted in a wineglassful of water every three hours, and kept it up day and night for two weeks. I then changed to Glycozone same amount in a wineglassful of water every three hours.

I examined the urine from time to time and found that in ten days there was less albumen, pus and blood. In three weeks time, no albumen, pus, or blood could be found, and the patient improved in every way, and considered herself a well woman again.

About one year after, she had a similar attack but not so severe, and for which I gave her only the Glycozone in the same amount as before. By the time she had taken two pound bottles of the Glycozone, the albumen had entirely disappeared, and she has remained as in her usual health.

On examination of the urine some months since, no trace of albumen or unnatural condition of urine could be found. I consider the woman's life was saved by the internal use of Peroxide of Hydrogen (medicinal), and I would like to hear that others have used the same in acute suppurative nephritis and with as good results.

I am now using Hydrozone instead of the medicinal Peroxide in my practice, owing to the fact that it is considerably stronger and more powerful in its healing properties.

HYDROZONE AND GLYCOZONE IN THE TREATMENT OF GONORRHŒA.

(Reprint from the *New York Medical Journal*, for Sept. 4, 1897.)

To the Editor of the *New York Medical Journal:*

Sir:—My attention has been attracted to an article published in your journal for July 3d, by Dr. J. A. Silverman, of Butte, Montana. The writer states that no antiseptic has been discovered that will destroy the gonococcus without doing injury to the mucous membrane. As I presume that he is open to conviction, I submit to you for publication the following report of three cases which I have successfully treated during the last few months with Hydrozone and Glycozone, which I consider not only harmless but the most powerful healing agents that I have ever used in my practice of thirty-five years.

Case 1.—A man called on me on June 20th, with gonorrhœa of four weeks' duration, with profuse discharge, micturition painful, and an acute burning sensation along the entire urethral tract. Pus sacs had formed in the canal, the meatus was inflamed, and the gonococcus was active, as determined by microscopical examination. I prescribed injections of one part of Hydrozone and ten parts sterilized lukewarm water, an ounce

for each injection, four times daily. After two days I reduced the proportion to one part of Hydrozone and fifteen parts lukewarm water, and I directed Glycozone mixed with an equal amount of glycerine pure to be injected on his going to bed. The diet was not restricted, but no stimulants were permitted. In two days no gonococcus could be detected. The discharge was lessened, the pain and difficulty in micturition had ceased, and in twelve days the patient was well. Continence was imposed for two weeks. Doses of bromide of potassium and bicarbonate of sodium were administered from time to time in order to make the urine alkaline and quiet the patient.

CASE 2.—A married man who had contracted blenorrhœa from a woman who had the whites. The same treatment was ordered, and with such satisfaction that the woman also was brought for examination and treatment. Result, a cure in each case within three weeks.

CASE 3.—A man, fifty years old, contracted gonorrhœa from a woman of the town. As the patient lived in the country, twenty miles out, no treatment was given until ten days after infection. Aggravated symptoms of gonorrhœa were present, and there was chordee every night; the patient, to use his own expression, was "plumb wild." The Hydrozone injections were ordered, one part to twenty, owing to the great sensitiveness of the urethra and the possibility of orchitis if a stronger injection was used, as there was a slight swelling of the testicles. The Glycozone, diluted with equal parts of pure glycerine, was ordered at night. I also gave Glycozone internally in medicinal doses, to allay a gastric disturbance due to nervousness. In this case the treatment was continued for twenty-five days. I sent my patient to his cattle ranch happy.

WARREN E. DAY, M. D.

Prescott, Arizona, August 16, 1897.

CHRONIC GASTRITIS.

REPORT OF A CASE.

BY LOUIS A. KENGLA, M. D., OF SAN FRANCISCO, CAL.

(Reprinted from the *New England Medical Monthly and The Prescription*, February, 1898.)

A report of a very severe case of gastritis was freely copied in medical journals during the year 1896, in which Glycozone was successfully used.

At that time, J. W., aged 38, a blacksmith, came under my care. His illness began in 1894 with the usual symptoms of gastritis. In January, 1895, he had become so much worse that he placed himself in the hands of one of the best physicians, under whose care he continued until November of the same year, when I was consulted.

After hearing his history and the treatment given, I urged him to return to his physician, insisting that nothing more could be done. My protest was in vain.

Examination revealed an emaciated, thin and badly nourished body; his eye, skin and color fair though pale; his temperature normal; the bowels inclined to constipation with occasional diarrhœa with whites, pasty, offensive stools; the lungs, heart and kidneys healthy; the liver a trifle small.

There was no painful point and no evidence of enlargement, tumor or ulcer. He was so thin that the abdomen could be most thoroughly examined. His tongue was heavily furred, red at the tip, indented at the edges, and the papillæ red and prominent.

He complained of being unable to take either solid or liquid food even in small quantities without causing heaviness, weight, oppression, pyrosis, eructation of gases, nausea, and finally headache and vomiting.

Since 1894 these symptoms had increased in severity, the nausea never ceased, and this whole array of complaints would gradually accumulate in force and energy, overwhelming his system with an attack of headache and intermittent vomiting, that would last from three to five days.

In 1895, these storms growing worse, rendered his life almost unbearable. I had been attending him about a week, when one of these attacks occurred. He had been vomiting one day before I saw him. The scene was truly pitiable. I found my poor emaciated patient in a small darkened room, scarcely able to raise his head, gagging and straining constantly, bringing up finally, by the greatest of efforts, a teaspoonful of white glary mucous; his head bound tightly or wrapped in ice cloths; his eyes congested; his cheeks hollow; his skin sallow and pale; his face bespeaking the intense agony he suffered, begging and pleading to those around him for relief from the horrible nausea and wrenching.

I remained with him an hour, and during that time he was not free for five minutes from efforts at vomiting. His sleepless, aching brain seemed racked to distraction. He would gag, vomit, and fall back exhausted.

This continued three days, gradually lessening. Sleep came only through exhaustion. Every particle of food (liquid or solid) was promptly vomited. During these attacks the temperature was increased from 99 to 103.

These attacks were always of a similar character, and from November 1, 1895, to July 3, 1896, they occurred every ten days or two weeks.

The physician who had treated him had used drugs, diets and lavage faithfully and persistently, so that at the outset I was completely handicapped.

I began with the remedies which had given relief in similar cases, and in turn used acids, alkalies, alteratives, pepsin, digestants, purgatives, tonics, bitters, sedatives, diets, etc., either singly or in combination, until I had exhausted all the resources at my command.

The only perceptible relief came from the use of small doses of diluted hydrochloric acid between the attacks and a solution of cocaine and morphine during the paroxysm.

About July 3, 1896, I read the article referred to above, and in desperation and despair of ever relieving him, I ordered Glycozone one-half, then one drachm well diluted, twenty minutes before meal time.

In a few days he said he felt better; within a week he repeated the assertion. To the utter astonishment of myself and his friends, one, two, four and even six weeks passed, without a recurrence of his severe symptoms.

About August 20th, he was so much improved that, to hurry matters, I concluded to try lavage again. This was done at 5 P. M., and at ten that night he was in the throes of an attack which lasted two days.

He then resumed his Glycozone and continued to improve till October 15th, when on account of inactivity of the bowels and costiveness, he was given two grains of calomel, which brought on a slight headache and considerable nausea.

He had already been taking more food, but from this time it was increased in quantity and character, eating three fairly good meals a day, and enjoying them.

After beginning the use of Glycozone, the acid was continued a few weeks after meals, then left off entirely. No other medicine was used, except occasionally a pill of aloin, belladonna, strychnia, cascara, when bowels were sluggish.

To him, Glycozone proved the greatest boon, and to me, the relief given was simply wonderful.

It is useless to add that I have used the remedy in many cases since, and have met with excellent and even astonishing results.

CHRONIC CATARRHAL GASTRITIS: ITS PATHOLOGY, SYMPTOMATOLOGY AND TREATMENT.

By Dr. A. HAMILTON DEEKENS, of Tacoma, Washington.

(Abstract from the *Medical Sentinel*, of Portland, Oregon, for March, 1898. Published by the *N. E. Med. Monthly*, June, 1898.)

Under the above title, A. Hamilton Deekens, M. D., of Tacoma, Washington, contributes a most able article to the *Medical Sentinel* for March, 1898.

He discusses thoroughly the pathology of chronic gastric catarrh, and also its symptomatology, which he divides into subjective and objective.

The objective symptoms are: an enlarged, flabby and heavily coated tongue, sallow complexion, foul breath, irregular, feeble and rapid pulse, constipation and a high-colored urine, decreased in amount and increased in specific gravity.

Besides those objective symptoms, an analysis of the stomach's contents always shows a decrease of hydrochloric acid, rennet and pepsin.

The subjective symptoms are: a variable appetite, bad taste in the mouth, nausea or vomiting, headache and a sense of weight in the epigastrium, which is aggravated by eating.

The author describes the chemical diagnostic methods in use and then takes up the treatment of the affections; he, like all who have investigated the subject, finds that Hydrozone and Glycozone are the ideal remedies for this very common and distressing condition. As he says, the two most important aids in the successful treatment of this disease, lie in dietetics and the use of the stomach tube. Where milk is tolerable, at least two and a half or three quarts should be taken daily, and if combined with vichy water it will generally be well borne. Peptonized meat, oysters when not fried, most kinds of fish, and soft boiled eggs may be allowed. Fried food, salt and smoked meats, potatoes, cabbage, corn and leguminous foods should be avoided.

One of our most valuable remedial agents lies in the proper use of the stomach tube. The objects to be attained by its use are: (1) the removal of offending matter, (2) the cleansing of the membrane and the destruction of any micro-organisms which may be present, and (3) to stimulate the functions of motion and absorption.

For the first object an alkaline solution of sodium bicarbonate, at a temperature of 105° F. is very useful, the stomach being well filled before the fluid is allowed to return.

For cleansing the mucous membrane and destroying micro-organisms, the ideal medicament is Hydrozone in a 5 per cent. solution. Hydrozone is a very strong yet harmless antiseptic, and its action is remarkable in this class of cases.

At least two quarts of the solution should be used at one sitting and repeated every day, or as the case indicates. When the patient objects to the use of the stomach tube, he should swallow about eight ounces of a 3 per cent. solution of Hydrozone half an hour before eating, lie down and remain upon the back a few minutes, and then upon each side for the same length of time.

Hydrozone dissolves the mucus, kills the bacteria and places the stomach in a better condition to digest food. Other remedial measures consist in the administration of diastase, nux vomica, pepsin, gentian, etc., but the good results achieved by the use of Hydrozone and Glycozone in this class of cases is causing them to rapidly replace the older and less scientific methods of treatment by drugs which simply allay symptoms and do not correct the underlying fault.

ACUTE GASTRIC CATARRH.

By J. S. MOREMEN, M. D., Louisville, Ky.

(Abstract from *The New Albany Medical Herald*, for June, 1898.)

According to the writer the treatment should be based upon the use of an antiseptic which will destroy all pathogenic germs, and at the same time stimulate the walls of the stomach. The surface of the stomach is covered with a thick coat of stringy, tenacious mucus which is formed in large quantities, and the amount of normal gastric juice is very small, the acid often being almost entirely lacking. To remove this mucus from the walls of the stomach, Glycozone in teaspoonful doses, in water every two or three hours, is very effective, for the action of the glycerine is soothing to the membrane and the nascent oxygen liberated destroys all the bacteria present, and also dissolves the mucoid material which acts as plugs to all the peptic glands. This should be used for the first day, and on the second day a little food should be given, it being a good plan to give about a teaspoonful of Hydrozone in a tumbler of water a half hour before meals. Hydrozone cleanses the stomach, then follow with Glycozone immediately after eating. The amount of discomfort following the use of Hydrozone is indicative of the progress of the disease, for in proportion to the amount of this excessive secretion of mucus the discomfort will be relatively larger, and as the secretions of the stomach approach the normal the discomfort will diminish. The acute symptoms as a rule disappear in a day or two, but there is still the inflamed condition which requires treatment for a long time before a cure is accomplished. In addition to the treatment mentioned citrate of magnesia is often beneficial, and some of the natural aperient waters are soothing. The carbonated mineral waters are often very serviceable. The great treatment is rest, and the removal of all irritating material from the stomach, and if this is done the patient will be practically well in a very few days.

A RAPID TREATMENT OF CHANCROID AND ULCERATIVE SYPHILITIC LESIONS.

By A. H. OHMANN-DUMESNIL, M. D., of St. Louis.

(Abstract of paper read before the Missouri State Medical Association, at Kansas City, Mo., May, 1898.)

There is perhaps no venereal trouble more common than the chancroid or *ulcus molle*, and its treatment has been anything but completely satisfactory to those who are desirous of obtaining rapid as well as good results, which in the course of treatment had been unattended by any marked degree of pain. The older idea was to convert the specific process into a non-specific one by means of caustics, and this is, to a great extent, the idea which is still followed to-day by quite a number of members of the medical profession. In these days of rapid improvement in therapeutic methods, the great object is to devise a treatment which can be characterized by the old expression, *tuto, cito, et jucunde*. In other words, if a method can be devised which is safe, rapid and pleasant, that one is pretty certain to be adopted.

Let us take the experience of authors on the length of time required to have recovery follow the treatment of chancroid. It leads to the same general conclusion—that the cure of chancroid occupies from two to four weeks. There is always some uncertainty involved in the methods usually employed. It is for this reason that any method which will shorten the duration of treatment, lessen the pain, and require less attention is certainly preferable, and deserving not only of commendation but of adop-

tion. The method which I will describe is one superior to those which have hitherto been advocated by writers.

The method in brief is as follows: When the chancroid is seen it is washed with luke-warm water and carefully dried with absorbent cotton; after this Hydrozone is liberally applied to destroy any pus which may remain. This being done, nosophen powder is then placed over the site of the lesion. This operation is to be repeated twice daily. In a few days the site of the ulcer is dry and the case is cured.

The following are the records from the St. Louis City Hospital kindly furnished me by the internes:

Joseph K., aged 58, a native of New York; occupation, laborer; single; presented himself for treatment. The diagnosis was chancroid and arterio-sclerosis. He was admitted to the hospital Monday, Nov. 1, 1897.

TREATMENT.—Local applications to chancroids.

Nov. 30. Patient had a relapse and chancroid became worse. Hydrozone and nosophen were applied.

Nov. 31. Lesion looks dry.

Dec. 2. Lesion looks better.

Dec. 4. No more pain in buboes.

Dec. 6. Chancroid healed.

Anton K., aged 27, born in Iowa, for eight years a resident of this city, is a laborer by occupation, and single. Patient was admitted to hospital Nov. 21, 1897.

DIAGNOSIS.—Chancroid.

TREATMENT.—Local.

Nov. 30. Improving.

Dec. 6. Hydrozone and nosophen were ordered and improvement began.

Dec. 11. Chancroid healed.

W. R., aged 24, was born in Missouri; he is a laborer, and single. The diagnosis of his disease was chancroid.

Nov. 25. Hydrozone and nosophen ordered applied twice a day.

Nov. 26. Improved.

Nov. 29. Discharged cured.

Pat W., aged 43, was born in St. Louis; his occupation is that of a peddler; he is single.

DIAGNOSIS.—Secondary syphilis; a large superficial ulcer of the left leg is present.

TREATMENT.—Mercury pushed to tolerance.

Oct. 15. Some improvement.

Oct. 30. Improving up to Nov. 30.

Dec. 15. Hydrozone and nosophen applied; some pain.

Dec. 17. Lesion is dry; no pain; same treatment.

Dec. 20. Thin crust removed; treatment continued.

Under the same applications the ulcer continued to improve, and was well in a few days.

Chas. E., aged 28, was born in Sweden; his occupation has been that of a butcher; he is single. He was brought to hospital Oct. 27, 1897.

PRESENT CONDITION.—The patient is much emaciated and very weak. On the left side of his face there is a large ulcer with abrupt edges, rather round in outline, involving the integument and tissues beneath. On his lip and chin there are two others, that have become continuous with the large one. These sores have a greenish-yellow discharge that is very offensive, and when removed it leaves a raw bleeding base.

Dec. 2. Hydrozone and nosophen applied to cutaneous lesions twice a day.

Dec. 7. Lesions of face healed. Patient feels good and looks fleshy.

Henry S., aged 66, was born in Pennsylvania; he has always been a laborer, and is single. Was brought to hospital June 11, 1896.

This man has been here a dozen times before; he comes and goes at will. He is now suffering from tertiary syphilis, which is manifesting itself at different places over

the entire body. Having been placed on kali iod. he feels much better and is doing nicely.

June 30. Condition remains about the same.

Aug. 31. Have patient on Hg Cl2 and kali iod. at present, and ulceration is healing very slowly. Dressing daily.

From Sept. 15, 1896, to Nov. 30, 1897, patient's condition remained the same.

Dec. 6. Patient's left eye is in a bad condition; the tissues underneath are ulcerated. Hydrozone and nosophen were ordered applied daily.

Dec. 9. Much improvement.

Dec. 12. Patient is so refractory that the treatment cannot be regularly applied; but in spite of this he improves.

It must be borne in mind that these represent but a few cases observed in a public hospital. This institution is but a temporary affair in St. Louis, and, as a natural consequence, the patients are in anything but an advantageous condition to yield good results. Despite this, however, the rapidity with which final cures resulted is something remarkable. The average duration of the treatment in chancroids was five days, and in the syphilitic ulcerations it was seven days.

HYDROZONE AND GLYCOZONE IN DISEASES OF THE GENITO-URINARY ORGANS.

By A. E. NEUMEISTER, M. D., of Kansas City, Mo.

Professor of Clinical and Surgical Diseases of Women, Kansas City Homœopathic Medical College.

(Abstract from *Medical Arena*, for June, 1898.)

Case No. 1.—A young lady came to me for diagnosis and treatment for what she called leucorrhœa, and at the same time complained of severe burning sensation during micturition. A thorough examination demonstrated that she was troubled with acute gonorrhœa; I made an application of Hydrozone, full strength, with cotton in the vagina and vulva; this I followed with a tampon of boro-glyceride and allowed it to remain twenty-four hours. After the tampon was removed, one ounce of Hydrozone to one pint of warm water was used as a vaginal douche twice a day for the first eight days. The parts commenced to assume a healthy appearance and I continued the treatment every other day for two weeks, when the patient felt perfectly well. The internal remedy was bicarbonate of potash to correct the acidity of urine.

Case No. 2.—A married lady who had suffered for one year with ulceration of the cervix-uteri caused by a severe laceration of the cervix. The posterior wall of the vagina was also ulcerated and the meatus urinaris was congested and tender; in fact the whole genital tract was diseased. The first application of Hydrozone, full strength, caused severe pain for a few moments, but it soon ceased after the use of a tampon of boro-glyceride. I treated this case every other day, and in three weeks the mucou-membrane of the vagina and cervix had wonderfully improved; on the cervix the ulceration had healed. Then I ordered a douche of warm water containing one ounce of Hydrozone to one quart of water every night for two weeks. The ulceration is cured but the laceration still remains, and is in a healthy condition for operation.

Case No. 3. *Ulceration of the Lower Bowel.*—This patient suffered for several years and at times was unable to be out of bed. Only warm injections would relieve her temporarily. I made an examination with the rectal-speculum and after cleansing

the parts with warm water, made an application of equal parts of Hydrozone and water, on absorbent cotton. This application caused severe pain for a few moments, but the patient felt happy the next day. I made two applications a week for two weeks; the ulceration disappeared and the patient considered herself permanently cured.

CATHETERS AND CYSTITIS.

By R. N. MAYFIELD, M. D., New York.

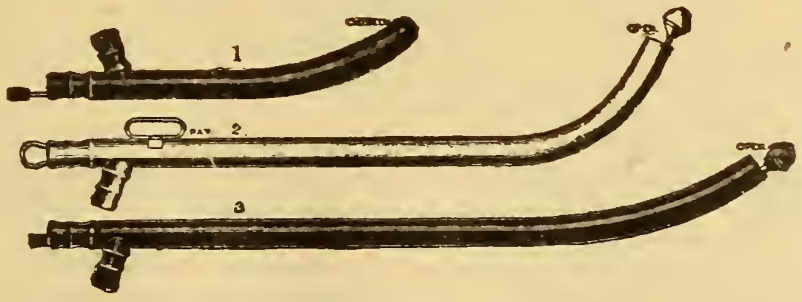
Formerly President of the Colorado State Board of Medical Examiners and Lecturer in Pathology and Clinical Medicine, University of Colorado, etc.

(Published by the *New York Medical Journal*, for September 3, 1898.)

It is well known that when it is necessary to use a catheter of usual construction—that is, with the ordinary fine perforations as an inlet thereunto—it does not always work readily or satisfactorily, or subserve fully the results expected from it.

Examples of such unsatisfactory operations are seen where there is a good deal of mucus present in the bladder, such mucus being apt to surround or lie upon the end of the catheter, clogging or stopping the apertures thereof and preventing the ingress of fluids to be drawn off; again, when sediment or calcareous matter is present, it clogs, even sometimes filling in part or completely the apertures, with consequent failure of the catheter to fully perform its functions. Such failures are especially apt to happen in nearly, if not quite, all forms of chronic diseases of the bladder, and notably so in cystitis.

My object, therefore, is to present a catheter that is reliable and efficient in operation when the use of a catheter is indicated in all conditions and diseases of the bladder. In this instrument the danger of clogging or failure to perform its functions is obviated and its interior may be readily made aseptic, and bits of mucus that usually clog an ordinary catheter may be readily drawn off. This catheter is of very simple construction, being tubular, with the curve of an ordinary instrument, and opened at the end for an inlet as per following cuts:



For the closure of this open end, and for the easy insertion of the catheter, as well as for other purposes, a bulbous or rounded head is used, preferably solid, and attached to one end of a wire, passing through the body or tube and projecting at its rear or outlet end. (The catheter is made of either metal or hard rubber.)

This construction forms a very efficient catheter having an area of opening so large as to greatly obviate the danger of clogging, for, if mucus should lodge against the open end, the working of the head back and forth upon its seat would cut away the obstructing bits of mucus and permit them to pass through the tube.

With this instrument there should be no hesitancy in using nitrate of silver, iodine, corrosive sublimate, carbolic acid, or H_2O_2 solutions in the bladder, as any of these

solutions can be readily drawn off or neutralized, thus preventing poisoning from absorption, or else preventing rupture from gases that form in the bladder.

Regarding the treatment of cystitis by means of this catheter, presuming that we have a typical case, with ropy, viscid and tenacious mucus, the membrane thickened and possibly ulcerated, and in deep folds—"ribbed," as it were—I begin the treatment as follows:

1. Inject a quarter of a grain of cocaine dissolved in a drachm of water into the membranous portion of the urethra.

2. Anoint the largest hard-rubber catheter that can be well passed into the bladder, and increase the size one number each week until the urethra is normal in size.

3. Begin with diluted H_2O_2 solutions—preferably Hydrozone—one part to twenty of lukewarm water, using this solution freely, especially when employing the large size catheter. If the small size is used at the beginning, I recommend the use of only two or three ounces at a time until removed by the return flow. This can be repeated until the return flow is clear and not "foaming," which indicates that the bladder is aseptic.

4. Partly fill the bladder with the following solution: tincture of iodine compound, two drachms; chlorate of potassium, half a drachm; chloride of sodium, two drachms; warm water, eight ounces. Let it remain a minute or so and then remove. This treatment should be used once or twice a day.

Where I suspect extensive ulceration I recommend once a week the use of from ten to twenty grains of nitrate of silver to the ounce, and neutralize with chloride of sodium solutions.

This treatment carried out carefully will be satisfactory, as there is no remedy that will destroy bacteria, fœtid mucus, or sacculated calcareous deposits like Hydrozone.

CLINICAL CASES.

CASE 1. UTERINE CATARRH.—Mrs. Jane S., age 40, gives following history: Married, has had three children, also two miscarriages, during the ten years of her married life. Complains of pain, bearing down, dragging. Has leucorrhœa, mucopurulent, ropy and stains the linen. Dysmenorrhœa as there is a slight retroflexion. Frequent micturition at times with constipation. On examination, a slight laceration was noticed.

Treatment: After cleansing as directed in number three and dilating the cervix and correcting the retroversion, I injected two drachms of Hydrozone full strength through the hard rubber irrigator, taking care that the instrument does not clog, as it would prevent the return flow of foam and gas.

I repeated daily injections with the same amount of Hydrozone at each treatment. After the third application there was a very perceptible change for the better in the leucorrhœa. This treatment was kept up for two months, two or three times a week, when a cure was accomplished.

Do not use any swab with cotton as you destroy the epithelium of the young granulations. Apply your remedy only through the hard rubber irrigator, using about one-sixth of the amount of solution you would use in the bladder.

CASE 2. PURULENT CYSTITIS.—John McD., laborer, age 47, has had gonorrhœa for the last two years. Has had gleet and trouble with his bladder. Internal medication afforded him no relief. His urine is stringy, fœtid and ropy, being alkaline at all times.

On examination I passed No. 8 American bulb with difficulty.

Treatment: After using one-quarter of a grain of cocaine, I began to dilate until I could pass the smallest size hard rubber catheter. After thorough cleansing as directed in number three using two or three drachms of pure Hydrozone in the bladder daily, after six weeks of treatment the gleet and cystitis had entirely disappeared.

RHINOLITH OR NASAL CALCULUS.

REPORT OF A CASE

AND EXHIBITION OF PATHOLOGICAL SPECIMEN.*

By WILLIAM H. POOLE, M. D., Detroit, Mich.

Member of the American Medical Association, Wayne County Medical Society, etc.

(Reprinted from the *New York Medical Journal*, July 9, 1898.)

Mr. President and Members of the Wayne County Medical Society:

The pathological specimen I have the pleasure of exhibiting to you this evening is one of unusual interest, even to those of us who limit our practice to diseases of the eye, ear, nose and throat, from the infrequency with which we meet these cases and also from the circumstances which led up to its discovery, owing to the fact that it was situated somewhat differently from most cases of this kind.

Miss L. K., aged 24 years, from whose nose this was taken, consulted me January 1, 1898, regarding her nasal catarrh, with which she stated she had been afflicted ever since her childhood. Ten years ago she had been treated for about a year by one of the leading rhinologists of this city, receiving considerable benefit, but for the last two or three years she has had a rather profuse nasal discharge, thickened, and increasingly offensive in character, with obstruction to nasal respiration, loss of smell, nasal voice and the other usual symptoms which we find in an aggravated case of chronic rhinitis. Lately she had suffered from headache, which was increasing in severity and was also troubled with weeping of the left eye. She had been using an atomizer for some years without getting any other relief than the keeping of the nose approximately clean.

On making anterior and posterior rhinoscopic examination I found considerable hypertrophy of the turbinates of the left side, especially of the inferior turbinal.

I suggested an operation for the removal of the hypertrophied tissue of the lower turbinal, which was impinging on the floor of the nose. This was agreed upon, and on

* Read before the Wayne County Medical Society, February 17, 1898.

Saturday, January 15th, I operated at 3 P. M., in the usual way, cocainizing the parts thoroughly and making a practically painless operation.

Hemorrhage was not very profuse and was readily controlled at this time. The patient returned home, and soon after suffered from an attack of nervous sick headache, to which she was subject upon occasions of nervous strain.

As usual, the headache ended with an attack of retching, after which straining the hemorrhage started in afresh and rather profusely. I tried again to control it with styptics and plugging the naris with absorbent cotton, but did not succeed in thoroughly arresting the flow of blood, and, as the patient was getting very weak, with the kind assistance of Dr. Suttie, I tamponed through the posterior naris with a sponge tent, which instantly stopped the hemorrhage. I then ordered her to be liberally supplied with beef extract, for the double purpose of nourishment and to increase the arterial tension.

Sunday, the next day, she was doing nicely, but was very weak; there was no recurrence of the hemorrhage, but I did not think it advisable to remove the tampon as she was too weak to bear it.

Monday, January 17th, the patient was a little stronger, but owing to debility I could only remove a part of the tampon from the anterior naris.

The next two days I removed still more of the sponge anteriorly, in all about two-thirds of it being removed up to this time, the patient still being too weak to bear much manipulation.

On Thursday morning, January 20th, I attempted to remove the remainder posteriorly, but found it so firmly fixed that it could not be dislodged except with extreme force under anesthesia. I called in Dr. Chittick and anesthetized the patient, when, with considerable difficulty, we removed the remainder of the sponge.

After the patient recovered from the anesthetic I cleansed the nasal cavity thoroughly with Hydrozone, one part to twelve parts of lukewarm water, and she returned home rejoicing, the turbinal wound being in good condition, healing nicely.

Next morning she came to my office for treatment and stated she had enjoyed perfect freedom in breathing through that nostril until about 4 o'clock in the morning, when, changing her position in bed, that side became suddenly obstructed. After cleansing the nostril, which was seemingly full of an offensive discharge, I discovered this body, which was attached at the posterior end on the outer side of the inferior meatus, lying, as it were, in a groove or pocket.

The anterior or loose end of it was sharp like a spiculum of bone, and black in color; it was freely movable about its long axis, so that you could pass a cotton holder around it and lift it from its bed. After cocainizing, I grasped it with a dressing forceps and, giving it a twist, removed it. I then thoroughly cleansed and disinfected the cavity with the Hydrozone solution, which removed the odor and rendered the cavity wholesome.

The next day the two smaller pieces were removed while cleansing and treating the nose. They were loose and seemed as though they had just scaled off from the bed where the larger piece had lain.

The spraying of the nasal cavity with Hydrozone, followed by the use of Glycozone, constituted the treatment for the next four days, by which time the offensive odor had entirely disappeared, and the parts had assumed a healthy condition.

This concretion formed on the outer side of the inferior meatus and as it grew larger it obstructed the flow of tears through the nasolacrymal canal, as evidenced by the overflow of tears from the left eye, which condition ceased immediately after removal of the rhinolith.

The secondary hemorrhage was evidently due to a relaxation of the pressure on the vessels of the turbinate, owing to the calculus being disturbed in its position when the patient was retching.

As to the exciting cause of the formation in the case of this young lady, I could get only a negative history, there being no recollection of any foreign object having

been put up the nose in her childhood. Being desirous of ascertaining, if possible, what served as a nucleus and at the same time of finding out the composition of the formation, I cut it in two.

Microscopical examination reveals that it is composed of amorphous phosphates, undoubtedly the phosphates of calcium and sodium, which came from the tears.

There has been a marked improvement in the young lady's condition since the removal of the rhinolith; overflowing of the tears in the left eye has ceased, nasal respiration has become perfect, her voice has lost the nasal twang, and her general health has improved rapidly, as indicated by the fact that she has gained four pounds in weight since the operation (four weeks ago), and is still improving.

270 WOODWARD AVENUE.

GUN-SHOT WOUNDS.

BY H. R. CHISLETT, M. D.

Professor of Homeopathy and Practice of Surgery in the Hahnman Medical College and Hospital, Chicago, Ill.

(Abstract from *The Clinique*, Sept. 15, 1898.)

Gun-shot wounds met with in ordinary practice vary from simple contusions to frightful lacerations, their character being influenced by the size, shape and velocity of the missile; the distance from which the shot is fired; the location of the injury and the plane at which the bullet strikes the body. The first thing to do, when a wound of this nature presents itself is to find out the entrance, the exit (if such there is) and the amount of injury done. In so doing, bear in mind that a bullet is like any other aseptic foreign body and that it may remain buried in the tissues almost indefinately without special harm. The wound of entrance is usually round and stellate in form, about the size, or a little smaller than the missile itself, the edges being darkened and inverted, whilst the wound of exit is larger and more irregular and shows more laceration but less contusion. The greatest stumbling stone to successful treatment in these cases is the undue importance attached to the early removal of the missile, by the laity as well as the physician. One must remember that the simple presence of the bullet is no indication for its removal and that probing often does more harm than the wound itself.

The wound and surrounding parts should be thoroughly cleansed with Hydrozone, dressed with iodoform and the patient put to bed and the injured part at absolute rest. Great precaution should be taken to not infect the wound during the cleansing process so it is well to fill the opening with some dry dusting powder or pack with carbolized or mercuric gauze. If the wound is a few hours old and septic, put patient under anæsthetic, prepare parts as for an ordinary operation, probe and find bullet, then cut down with ordinary scalpel and remove. Any other foreign body, as dirt, cotton or clothing should also be removed, then irrigate with Hydrozone and dress as ordinary wound.

If on examination it is found that some of the main vessels are ruptured, ligate above and below and separate. Bring together the ends of injured nerves, then cleanse the whole with Hydrozone and dress.

Never use sutures if traumatism is very great, but wait till parts are healthy. If suppuration occurs, the only treatment is drainage. Injured bone should be treated on general principles. But when very badly comminuted and complicated with serious injury to the vessels or nerves, amputation is the only course to follow.

THE TREATMENT OF DIPHTHERIA, PAST AND PRESENT.

By W. J. MARTIN, M. D., Pittsburg, Pa.

(Abstract from *Medical Century*, Oct. 15, 1894.)

Modern methods in the treatment of diphtheria have robbed the disease of much of its terror, reduced its death-rate and shortened its duration.

Auto-infection and asphyxia are things of the past, the diphtheritic membrane is cleared off as soon as it appears, and the much-dreaded blood poisoning of the past avoided. Dr. Martin says he has yet to see the case in which modern treatment, if well applied, has failed to clear away the entire deposit.

The old *alcohol* gargle has been replaced by Marchand's H_2O_2 (medicinal) spray, with the very happiest results. *Kali bichromicum* is given internally, the pulse is carefully watched, and if the slightest weakness or unsteadiness is detected, whiskey in teaspoonful doses is administered every two hours. The H_2O_2 spray is also used as an immunizer with success.

HEMORRHAGE IN OBSTETRIC PRACTICE.

By GUSTAVUS M. BLECH, M. D., Chicago.

(Abstract from *American Medical Journal*, April 30, 1898.)

Hemorrhage in obstetric practice is met with either during pregnancy or post-partum, and the parturient should discover whether it is from the vulva, the vagina or the uterus. If from the vulva it is due to laceration or traumatism; if from the vagina, to ulceration and ill-fitting pessaries. Bleeding from the uterus in pregnant women is of the utmost importance, as it generally means abortion, and inspection or exploration will show if it has taken place or not. Many other causes of hemorrhage are met with during pregnancy, such as placenta prævia, varices or carcinoma, so that the physician should always be on his guard when such a case presents itself.

Post-Partum Hemorrhage is also met with quite frequently, and is generally due either to negligence on the part of the parturient, to over-filled bladder, or to rupture of the uterus. (*The latter is very fatal.*) In all such cases a correct diagnosis should be made by means of a physical examination.

Asepsis should be thorough and everything brought in contact with the genitals as well as the genitals themselves should be well disinfected. Dr. Blech strongly recommends "*hydrozone*," and says he has always found it a very satisfactory antiseptic and germicide.

The removal of the cause is the first step to be taken. If the hemorrhage is due to a ruptured varix vessel, compression is called for; if due to carcinoma, radical measures should be taken immediately. Rest and opiates will generally stop it if due to placenta prævia; if not, tampon vagina and as a last resort bring on labor. Lacerations of the perineum, vagina and cervix should be stitched up and a laparotomy done if the uterus is ruptured.

PUERPERAL INFECTION.

By W. E. BATES, M. D., Dansville, Cal.

(Abstract from *Occidental Medical Times*, July, 1898.)

Puerperal infection is a disease that requires the most energetic treatment at the very sign of its approach and can be readily ameliorated if dealt with promptly and correctly. The disease is due to pathogenic organisms, the streptococci and the staphylococci and the predisposing causes are bruises and lacerations of the parturient canal. It is an infection met with especially in primipara, as their labor is usually more protracted, their tissues softer and their birth canal narrower and more liable to injuries.

The symptoms appear about the third day and start in with a severe chill followed by a temperature of 103° or 104°; the pulse varies from 120 to 160 and the respirations from 28 to 50. The lochia and milk are greatly diminished, the tongue furred, the appetite poor and tenderness is felt over the uterus which increases to a decided pain within 48 hours. The patient complains of headache, his skin is hot, harsh and dry and he takes on a typhoid look. The pathological condition is that of septicæmia produced by an infected ulcer or decomposed tissues along the parturient canal.

After a thorough vaginal douche of Hydrozone, a systematic examination should be made and the seat and cause of the infection determined. If parts are found to be lacerated, they should be cauterized with equal parts of tincture of iodine and carbolic acid and sealed; an iodoform suppository should be used and a cleansing antiseptic douche given every three hours for a couple of days. If the seat of infection is in the uterus, gently inject a 50 per cent. solution of Hydrozone and irrigate with slightly carbolized water; if due to detained decomposing placenta, decidua or blood clots, the whole uterine cavity should be curetted and a solution of Hydrozone injected and the whole irrigated with carbolized water. This irrigation should be repeated every three or four hours.

Keep patient on an easily digested diet. Quinine and iron, if well borne by the stomach should be freely given so as to combat the disease and keep up the strength of the patient.

CHOLERA INFANTUM.

By S. D. YERINGTON, M. D., McBain, Mich.

(Abstract from *The Medical Brief*, July, 1898.)

When called in to see a case of this kind, the physician finds a fluttering pulse, hot skin, dull eyes, bowels sometimes bloated and sometimes collapsed, and a thirst more or less raging (a prominent diagnostic sign).

Place the child in a tub of warm water; as soon as it gets tired or frightened, take it out and put to bed without drying; repeat as soon as it gets hot and restless again. Do this till the child's skin becomes soft and cool. Allow the infant to drink as much as it likes of the following: Water, one quart, add epsom salts and stir until you get a sweetish taste; saltpetre, 20 grains; pod opium, half grain; and give also a teaspoonful every two or three hours of the following cordial: Rhubarb and soda bicarb. of each ʒ ii, oil of pepperment m. ii., pepper ʒ ss., add to ʒ iv. of hot water. This will cool the parched tongue, stomach and bowels, improve their tone, soothe the irritated mucous membranes, allay inflammatory action and quench the terrible thirst. Give the stomach and bowels as much rest as possible by keeping all food away from child, and if stools become bloody add ergot to the cordial.

When the child begins to get restless for food, order malted or peptonized milk, in teaspoonful doses every two or three hours. If the stools become greenish, order small doses of calomel and soda. Dr. Yerington mentions several cases in which he had excellent results by the use of Marchand's H_2O_2 (medicinal) and recommends it in all catarrhal troubles of the stomach and bowels.

TRAUMATIC NASAL HEMORRHAGE.

By M. A. GOLDSTEIN, M. D.

Professor of Otology, Beaumont Hospital Medical College; Consulting Aurist to the Alexian Brothers' Hospital and to the Sisters of St. Joseph School for the Deaf, St. Louis, Mo.

(Abstract from *The Memphis Lancet*, August, 1898.)

Traumatic nasal hemorrhage met with by the rhinologist is the result either of injury or of some intra-nasal operation, and can readily be arrested by the operator by the use of cocaine, the galvano cautery, or a hot vaseline spray. If this fails, the plugging of the nasal cavity with gauze or cotton tampons soaked in some oily substance, or the application of various astringents or styptics, as picric acid and Monsell's solution, should be tried. Dr. Goldstein sprays the bleeding area profusely with Hydrozone and then inserts cotton tampons, saturated with the same remedy, into the nasal cavity, and says he has found most excellent results.

PREVENTION OF HAY FEVER.

By ALEXANDER RIXA, M. D., of New York.

(Abstract from *The Journal of the American Medical Association* for January 21, 1899.)

After a highly interesting historical review, and a brief survey of the results achieved in the past few years, the writer resumes the results of his own investigations.

His ingenious researches for a number of years, regarding the etiology of hay fever, led him to admit that the pollen of the Roman wormwood, ragweed (ambrosia artemisæfolia) is the primitive and active cause of this peculiar disease. By inhaling these pollen he produced the symptoms of genuine hay fever. He writes as follows:

From the time I found the pollen to be the exciting cause of the disease, I concluded in a logical way upon the proper treatment. I conceived the idea of rendering the receptacle aseptic by preparing the soil for the reception of the pollen. Naturally, they will find no proper soil for a possible generation, propagation or development, destroying their existence in embryo, so to speak, and with it the real cause of hay fever. For this purpose I decided on the following treatment.

About two weeks before the onset of the disease I commenced to irrigate or sterilize the nasal cavity and the post-nasal spaces with a harmless antiseptic solution, using the douche and atomizer. After giving a great number of antiseptics a fair trial, I decided on Hydrozone as the most innocuous and most powerful germicide. Hydrozone is a 30-volume aqueous solution of peroxide of hydrogen. At the beginning I use it for irrigation diluted in the proportion of one ounce of Hydrozone to twelve ounces of sterilized water. Nearing the period of the expected onset of the disease, I increase the dose to two or three ounces of Hydrozone to twelve ounces of the sterilized water, according to the severity of the disease, using the douche, either tepid or cold, four times a day—morning, noon, evenings and at bed-time—while during the intervals I use the atomizer, with a solution of Hydrozone and pure glycerin, or sterilized water, one to three, thus keeping the nares perfectly aseptic during the entire period, and preventing the outbreak of the disease in consequence thereof.

OTITIS.

By HUGH BLAKE WILLIAMS, M. D., of Chicago, Ill.

(Abstract from *The Alkaloidal Clinic*, of Chicago, for January, 1899.)

The more I see of chronic suppurative inflammation of the ear, the more convinced do I become that the element of chronicity is due to lack of thoroughness in treatment. The method of procedure mapped out below will not succeed in cases where necrosis has occurred, but in all others it will reduce the duration of treatment from months and weeks to days.

The patient is placed upon the side with the affected ear up. The concha is filled with Marchand's Hydrozone, which is allowed to remain until it becomes heated by contact with the skin, when, by tilting the auricle, the fluid is poured gently into the external canal. The froth resulting from the effervescence is removed with absorbent cotton from time to time and more Hydrozone added. This is kept up until *all* bubbling ceases. The patient will hear the noise even after the effervescence ceases to be visible to the eye.

Closing the external canal by gentle pressure upon the tragus forces the fluid well into the middle ear, and in some instances will carry it through the Eustachian tube into the throat. When effervescence has ceased the canal should be dried with absorbent cotton twisted on a probe and a small amount of pulverized boracic acid insufflated.

The time necessary for the thorough cleansing of a suppurating ear will vary from a few minutes to above an hour, but if done with the proper care it does not have to be repeated in many cases. However, the patient should be seen daily and the Hydrozone used until the desired result is obtained.

Care is necessary in opening the bottle for the first time, as bits of glass may fly. Wrap a cloth about the cork and twist it out by pulling on each side successively.

In children and some adults the Hydrozone causes pain, which can be obviated by previously instilling a few drops of a warm solution of cocaine hydrochloride. In this note it has been the intention to treat suppuration of the ear rather as a symptom and from the standpoint of the general practitioner.

ACCIDENTAL WOUNDS OF THE FEMALE BLADDER.

By FREDERICK HOLME WIGGIN, M. D., New York City.

Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6–9, 1899.

(Abstract from *The Journal of the American Medical Association*, of Sept. 9, 1899.)

Accidental opening of the bladder has, for many years, been considered one of the most serious accidents that could occur in the course of the complicated work which gynecic surgeons are often called on to perform. The following case is offered in illustration of this type of injury:

M. H., unmarried, æt. 41, was admitted to the City Hospital, Blackwell's Island, N. Y., Sept. 30, 1898, suffering from a large myoma, which sprung from the anterior uterine wall and extended above the umbilicus. On Oct. 3, the abdomen was opened, and the tumor, which weighed seventeen pounds, was drawn through an incision six inches in length, freed from its attachments and removed, together with the body of the uterus amputated near the internal os. As hemorrhage was profuse it became necessary to remove the mass very rapidly, to accomplish which the anterior attachment of the tumor was clamped and cut, when it was discovered, from the escape of urine, that the bladder had been opened near the fundus.

The general cavity had previously been shut off with gauze pads and thoroughly irrigated, followed by the use of Hydrozone in half strength, and this, in turn, by saline solution. The gauze pads were now changed, and the opening in the bladder, four inches in length, was closed by means of two layers of chromicized catgut sutures. The wound was then disinfected, and there being a large peritoneal flap, it was attached to the bladder and made to cover the line of sutures, thus making the bladder-wound extra peritoneal. After further washing out of the abdominal cavity with Hydrozone and the saline solution the external wound was closed, without drainage, and the usual dressings applied. The patient being feeble it was not thought advisable to make a vesico vaginal fistula to drain the bladder, but, instead, a self-retaining catheter was introduced. At the end of ten days, however, tumefaction occured over the lower angle of the abdominal wound, and, on opening it, urine began to escape. A vesico vaginal fistula was now made in order to afford adequate drainage. The sinus in the abdominal wall was curetted and, after being thoroughly disinfected with Hydrozone, its walls were sutured. Soon afterward, the sinus having closed, the sutures which kept open the vesico vaginal fistula were removed, and the latter closed quickly without any further operative interference.

Percival (in *British Medical Journal*, 1897, Vol. 1, p. 1282) reports a case of ruptured bladder on which he had operated. It was closed by means of a double wall of Lembert silk sutures. The wound in the abdominal wall was closed, after the peritoneal cavity had been flushed out with boric acid solution and a large quantity of clots and urinous fluids had been removed. For a few days the patient did well, and then died from peritonitis. But the necropsy proved that the bladder-wound had completely healed. It is the writer's opinion that had saline solution and Hydrozone been used, instead of boric acid, and the abdominal wound been closed leaving saline solution in the peritoneal cavity the patient would probably have recovered.

SENILE GANGRENE.

By JOHN A. HENNING, M. D., Garnett, Kansas.

(Abstract from *Chicago Medical Times*, for January, 1899.)

The following remarkable case of idiopathic senile gangrene was first seen in February, 1898.

Mrs. P., æt. 56, noticed her right little toe turning black and becoming very painful. She had been in poor health for the previous three or four months—her symptoms indicating a rheumatic diathesis. Examination revealed a gangrenous little toe, involving to some extent the next toe. The pain was constant, and extended from the toe to the knee. The anterior half of the foot was considerably swollen. The patient stated that the diseased parts had never been bruised by any accident and she could not account for her condition.

At the end of a month the four small toes, including the foot three inches above, were black, swollen and very painful. At the end of the third month I amputated the four smaller toes—the larger toe up to this time was but slightly involved—and also pared off the dead muscles, leaving the bones clear, and the arteries easily seen and counted. There was at times slight hemorrhage. At the end of the fourth month I amputated the large toe, at which time the disease had formed a line of demarkation about half way between the toes and ankle. The muscles on top of the foot were all destroyed, the sole alone being left intact This was about the first of August. The patient was told that the hot weather was unfavorable in her case. Nevertheless she held her own during the summer season, and at the commencement of cooler weather the foot began to heal nicely.

And now, Nov. 20, 1898, about the ninth month of her disease, she is cured, having a stumpy foot without toes, although the foot is still tender and the patient will perhaps not be able to walk for two or three months to come. She feels well, however, better than for several years; eats and sleeps nicely, bowels regular, urine normal, sews and works some, and feels happy.

Only a general outline of the treatment can be given here. Internally, remedies were given for the purpose of eliminating from the system the excessive amount of uric acid and effete matter, believing that to be the primary cause of the gangrene. Tonics were also given. At the end of the second month, when the parts commenced sloughing, I applied a solution of borate of soda—ʒ j to a pint of soft water—saturated a cloth well, applied thoroughly over the parts, renewing every four hours. This treatment was kept up for months.

About the last of July, after amputating the four toes, when there was issuing a great deal of matter, I applied night and morning a 50 per cent. solution of Marchand's Hydrozone, alternating with Glycozone full strength. I would use the first three or four days, then stop it and use the Glycozone the same length of time. I would not willingly do without these preparations in any case of extensive suppuration. I do not say this as an advertisement, *but from merit.* These external applications were kept up until the foot was healed—leaving a stumpy foot, though very tender.

THE TREATMENT OF CHRONIC DYSPEPSIA.

By ROBERT C. KENNER, A. M., M. D., of Louisville, Ky.

(Published by *The Alkaloidal Clinic*, of Chicago Ill., for July, 1899.)

If one give ear to the laudations commonly applied to various articles which are offered to the profession as remedies for dyspepsia, he will believe that his resources for the treatment of the disease are very complete and effective.

I have treated all phases of this affection, and have given an honest trial to many agents that have been brought to my notice, but my experience has been far from satisfactory. Pepsin was for a short time esteemed by a large number of physicians as the necessary quantity in the treatment of dyspepsia. It was upon extended trial found wanting. Then other digestive ferments were added to the list. Not only was there a multiplication of forms of pepsin, but it was combined with other agents in varying proportions and strengths. Diastasic, pancreatic and other preparations, come to the physician in large numbers. Dr. George White, of Chicago, several years ago held that these agents were very often positively harmful. Many of the preparations generally kept in the drug stores were found, he said, to be toxic, and their employment tended to aggravate every feature of the disease. Besides, many of these preparations undoubtedly act injuriously upon the system, not only by the toxic material they contain but by their action on the coats of the digestive organs. Taken all in all, it may be said that these agents are more injurious than beneficial.

Without taking time to go into the reason why, we may conclude in face of the evidence that these remedies are without value, and this accounts for the failure of the practitioner to get the results he wishes.

In my practice, now covering a period of twenty years, I have tested these old-time remedies; and finding them valueless, have abandoned them and taken up a new treatment, which has brought me results of a most satisfactory nature. I have now tried this treatment for six years, and feel that it has been of the greatest service; so, because now I am able to bring about permanent cures, while in the past I only gave my patients relief of symptoms. I now began a new treatment which is based upon a logical study of the conditions present in these cases.

Intestinal fermentation is responsible for all the conditions present in most cases. Fermentation may result primarily from impaired stomach; that is, the walls of the stomach by dilatation or other cause may fail to pour out sufficient gastric juice. Organic disease of the stomach may cause fermentation in this way. Again, over-indulgence in food will very often produce this affection, and the continuance of the habit of over-eating will result in catarrh of the stomach, dilatation, chronic or sub-acute inflammation, and a multiplicity of troubles. In all cases of dyspepsia this element of fermentation is an active one, and it should be treated.

Glycozone will be found to serve as a remedy, *par excellence*, here. It is given before meals, in a mild two per cent. solution, in quantity of about two ounces; but after the meal is finished two teaspoonfuls of Glycozone should be taken. This should be well diluted with water, about a wineglassful. This remedy alone brings about many cures, of cases which have continued for a long period. It has a toning action on the wall of the stomach, at once relieves the element of fermentation, and digestion proceeds normally. Below are given several clinical histories which seem to prove the value of the treatment here advocated.

Mr. B. A., age 33, dyspeptic for a year, worse in the past six months; greatly emaciated, pallid, slightly tinted with bile, appetite good, but he suffered so greatly with dyspepsia that he ate only small quantities, and with great caution. He had constantly a "sour stomach," and his bowels always contained considerable flatus. He had taken all forms of pepsin and digestive ferments, and many popularly advertised remedies. All these gave him for a short time some relief, but failed to give lasting results.

His diet was at once corrected; a list of eligible foods was written out, as well as one containing dietary articles which might bring unhappy results. No further reliance was put upon digestive ferments, and the patient was given Glycozone, four ounces aqueous solution just before meals, and just after eating he took two teaspoonfuls of Glycozone in a wineglassful of water. This treatment was persisted in for seven weeks; the patient at the end of that time having ceased to suffer, quit reporting to the office. He has remained well for a year, has his old-time weight and good humor.

Mrs. P., age 31, sustained a fracture of the tibia and fibula, and being very delicate the drain on the system caused her to have dyspepsia. She suffered greatly with gaseous distention and other symptoms. She was given a carefully selected diet and her bowels were acted upon for a week with aloin, belladonna and strychnine. Glycozone was now given, after the manner outlined in the preceding case. This patient recovered without incident.

Prof. J., age 41, a teacher by profession, had suffered several months with dyspepsia, also from bilious attacks. He was put on proper diet and Glycozone, experienced relief in a short time and went on to entire recovery. These are a few of the many cases which could be taken from my notes, but enough to demonstrate my meaning.

The author's experience is interesting, and we accept it as added evidence to the truth of the position we have held for years, that we should look to errors in the alimentary canal for the chief cause of most of the ills to which flesh is heir. Clean out, clean up and keep clean, should be our motto. The profession is indebted to Mr. Charles Marchand for his labors along this line, resulting in combining oxygen, that prince of all antiseptics, in such a way that we can conveniently use it, both internally and externally as required. In Hydrozone and Glycozone, we have a means of helping the sick not given to us in any other way—a means which we should fully understand and appreciate. We too have had cases of dyspepsia that refused to yield to any treatment, even when in our own house and fed under our personal direction, until Glycozone was administered in a manner similar to that described by Dr. Kenner.—ED.

HYDROZONE IN CHRONIC URETHRITIS.—REPORT OF A CASE OF THIRTY-TWO YEARS' STANDING.

By JOHN J. HARRIS, A. M., M. D., St. Louis. Mo.

(Published by *The Medical Times and Register*, December, 1899.)

Chronic urethritis in men is a most stubborn and distressing ailment, of which a permanent cure is rather difficult to accomplish for two reasons:

First.—On account of the double function of the organ which is the seat of the disease.

Second.—On account of the excessive tenderness of the involved tissues.

For a number of years I have treated cases of acute and chronic urethritis by means of all sorts of antiseptics of which the corrosive properties were rather objectionable, so that the results obtained were very unsatisfactory and quite discouraging.

Having used H_2O_2 with gratifying results in the treatment of vaginal troubles, I concluded to try this remedy in a case of thirty-two years' standing.

At first I was quite disappointed at the results, as my patient was suffering excruciating pains, and I was about to give up the treatment when I found out that the H_2O_2 which he had been using was not fit for medicinal purposes.

In order to avoid any similar blunder, I personally procured an original package of Hydrozone (double strength medicinal H_2O_2) which I have used in the following case to the great satisfaction of my patient and myself:

Married man, 55 years old, temperate in meat and drink and had never been given to any sort of dissipation. Model husband, large family of children.

Urethral trouble, its incipiency dating back thirty-two years, in the meantime underwent many kinds of treatment. Found some constriction at the meatus, which was only a pathological defect as the glans was red and highly swollen and supersensitive, so much so that the act of cohabitation was painful and at times to the degree that simply precluded that function.

The main trouble appeared to be an ulcerated section about $\frac{3}{4}$ of an inch from the meatus on the floor of the urethra and about midway of the anterior urethral tract some constriction.

In addition to external cleanliness I commenced the use of Hydrozone, 1 part diluted with 15 parts of Crystal water, determined that my mixture should be thoroughly aseptic, as well as the blunt syringe I used. I did not trust my patient with any part of the work and never missed a day for about six weeks and sometimes twice a day, injecting three or four syringefuls, taking time and manipulating gently, aiming to get the fluid a little past the stricture; then finishing up with scant syringefuls of Glycozone full strength, then dry dressing of Camphophenique powder and cotton.

At first there was much effervescing and some irritation, which gradually diminished to the end. Now I look back to a permanent cure.

I occasionally used a sound and managed to keep the foreskin well back, gradually increased the strength of mixture of Hydrozone and Crystal water 1 to 8.

I do not think this was a case of gonorrhœal origin; perhaps if such had been the fact, it would have been more easily cured.

It goes without saying that this is the ideal treatment for gonorrhœa.

CHRONIC DYSPEPSIA SUCCESSFULLY TREATED WITH H_2O_2.

By GEO. A. GILBERT, M. D., Danbury, Conn.

(Abstract from *New England Medical Monthly and Prescription*, December, 1899.)

The case herewith subjoined is one of interest on account of its typical character, its long-standing, and its speedy recovery on the adoption of a rational treatment.

Peter H., æt. 40, Hungarian, farm laborer, applied for treatment at my office on July 1, 1899. He was a strapping fellow, mostly skin and bones, of about 170 pounds weight, and would not have been thought ill except for the prominent dark rings under his eyes, his injected conjunctivæ, and a drawn, hunted expression on his countenance, indicative of past trouble or imminent danger. The history he gave was somewhat as follows:

Six years previously, on his voyage to this country, he suffered from an attack of acute gastritis, attended with retchings of the most violent character. Soon after landing he recovered sufficiently to attend to his work; but he says he has "never been the same man since." In all this long period he has not eaten "a good square meal," nor enjoyed what he has eaten, the burning pain in the epigastrium, after meals, becoming so great occasionally that for fear of its repetition he had gone without food for two or three days at a time. Belching of enormous quantities of gas, too, is common with him soon after eating, thus evidencing the presence of undigested food with its resultant fermentation. The patient states that in order to get relief he has spent all of his wages upon various doctors, specialists, quacks, nostrums, etc., and swears that he is worse to-day than on the day he first landed in this country.

On examination it was found that he was slightly feverish, pulse rapid, tongue flabby and heavily coated, while the teeth and entire cavity of the mouth were covered with a foul-smelling sticky mucus. That the stomach received, in the process of starch digestion, little or no assistance from the salivary glands of the mouth was plainly apparent. In deciding on the mode of treatment it was obvious that lack of the usual amount of gastric secretion must be met by restoring the physiological conditions upon which the secretion depends. In other words, in order to relieve the inflammatory condition of the gastric mucous membrane and restore the function of the peptic glands, antiseptics were required. The patient, therefore, was furnished with a flask of Ozonized water, made of one part Hydrozone to four parts of water, and directed to wash out his mouth every night and morning, thoroughly cleansing the tongue, teeth and gums of the unhealthy mucus and any pathogenic germs it might contain. To destroy the microbic elements of fermentation in the stomach and dissolve the tenacious mucus there, a mixture of one ounce of Hydrozone with two quarts of sterilized water was made, and half a tumblerful directed to be taken half an hour before meals. Having thus procured a clean surface in the stomach, the patient was advised to take immediately after meals, a drachm of Glycozone, diluted in a wineglassful of water, for the purpose of enhancing cellular action and stimulating healthy granulations. Of course he was ordered to select his food with care and eat regularly.

The result of this simple procedure was magical. Although for the first two or three days there was some discomfort after eating, this soon disappeared and at the end of a fortnight the patient reported that for the first time in six years he was enabled to eat his meals without dread of subsequent distress and eructations of gas. (In the opinion of the writer the fermentation was thus quickly subdued by the active oxidation resulting from the liberation of nascent oxygen.) The treatment was continued in this manner for another month and then gradually abandoned. On September 1st, the patient came to the office, expressed his eternal gratefulness, said that he weighed 185 pounds and believed himself to be completely cured.

REMARKS BASED UPON A FURTHER EXPERIENCE WITH CALOMEL IN DIPHTHERIA.

By L. D. JUDD, M. D., Philadelphia, Pa.

Read before the American Climatological Association at its Sixteenth Annual Meeting, May 9, 1899.

(Published by the *New York Medical Journal*, July 22, 1899.)

Two years ago, at Washington, D. C., I read a paper before this society, published in the *Transactions* of 1897, on Calomel as a Curative Agent in Diphtheria. It was based upon my experience with this drug covering a period of eighteen years.

In that paper I cited an experience with a case of inoculated malignant diphtheria in a woman fifty-five years of age, weighing two hundred pounds—the most pronouncedly malignant of any I have ever seen—due to a scratch on the finger by a child dying of this disease. That case was saved by the heroic use of calomel. Three hundred and sixty-five grains were given in thirty-five hours—twenty grains in the first dose and ten grains every hour thereafter until the characteristic action was secured. Rapid and complete recovery ensued without the slightest mal-effect due to this drug. Also in that of a child, aged eighteen months, where I gave eighty-five grains—ten grains in the first dose and five grains thereafter hourly, for sixteen hours, with similar results. Independent of these I had employed this drug in twenty-three cases of the most malignant type, forty-two pronouncedly severe, and in a much larger number, which might be called mild, though typical cases. The dose varied in accordance with the severity of each.

I have had no occasion to employ a course so heroic as in the first two named, although I have treated many malignant cases, less in degree, tempering the use of the drug to meet the requirements of each. I now believe that smaller doses of calomel, oft repeated, will exert as specific an action in the majority of cases as the larger doses related in my former paper on this subject. Nevertheless, I would feel perfectly justified in resorting to the more heroic treatment should the case seem to be approaching the moribund condition, and I would have no fear of any direful results from the drug.

Cases of diphtheria, *due to inoculation*, are comparatively rare. In twenty years I have had but three. Two of these occurred within a month after our meeting in Washington, and my experience with those and others has suggested these further remarks:

I was called to see a girl, aged fourteen years, suffering with a severe form of diphtheria, which responded readily to a sixth of a grain of calomel, given every half hour for twenty-four consecutive hours, decreasing the dose and lengthening the time of administration as she improved, using Marchand's H_2O_2 for frequent spraying of the throat. After securing the characteristic dejection I placed her on iron and chlorate-of-potash mixture. She made a rapid recovery. Two weeks later I was called to the younger sister of ten years and a brother of six years of age, both exhibiting a malignant form of diphtheria, as evinced by the swollen and deeply injected fauces, engorgement of not only the post-cervical, but the submaxillary and sublingual glands also. Every precaution had been taken to prevent communication with the elder sister and contamination of the house. On the third day the mystery was solved. The elder sister had been using chewing gum when her throat was sore and probably after the patches had fully developed. As children often do, she hid it by sticking it under the chair seats. Her sister and brother found the bonanza and duly reveled in their discovery. In this manner they were thoroughly inoculated. I commenced by administering to each a five-grain dose of calomel, followed every twenty to thirty minutes with half a grain, also dissolving calomel triturates in warm water, and in suspension, securing the topical action of the drug in spraying the nostrils. I decreased the dose as improvement manifested itself. The nursing was faithfully done. Inside of four days they were safe. The half-grain dose was given on an average of every half hour

for thirty-four doses, when I dropped to one-sixth of a grain for twenty-four hours, and to still smaller doses, until I felt that the disease was conquered. They both made good recoveries, and neither exhibited the slightest mal-effect from the calomel. It is a noticeable fact that the patient becomes stronger during the administration of this drug. There is less of local paralysis, and the so-called "heart-failure" from toxæmia is not liable to occur.

I have had a fair share of diphtheria in my practice since my last paper was presented in 1897, and not one patient has perished. Invariably calomel has been my mainstay.

Again I state that I have never seen a case of salivation, or anæmia, or any mal-effect that could be traceable to this drug in the treatment of diphtheria in the manner employed.

THE USE OF HYDROZONE AND GLYCOZONE IN GASTRIC AND INTESTINAL DISTURBANCES.

By W. H. VAIL, M. D., of St. Louis, Mo.

(Published by *Medical Mirror*, for December, 1899.)

I have, for a long time, been rather enthusiastic over the value of Hydrozone and Glycozone in treating diseases, and can attribute much valuable assistance and extraordinary results from their use in the last few years. The medical profession, in fact, has never gained such remarkable results from the employment of any production as it has from the use of these preparations, and my recent effects have almost, in a measure, surpassed them all. I will give a brief report of one remarkable case. I could mention several others, but a physician's time is valuable, and often he has not the moment to spend in perusing a legion of cases, so I select this one, it being the severest of all, to demonstrate, the potency of Hydrozone and Glycozone:

I was called to treat a young man, suffering from a severe gastro-enteritis. I found him in a most serious condition, having been delirious for three days. His temperature was sub-normal, 97.6, pulse 60, respiration 16. He was greatly emaciated, atonic, had inappetence, a severe agonizing pain in the stomach and intestines, at times so severe that he would sit on the edge of the bed and groan, oftentimes, yell. These attacks were always of a similar nature and occurred regularly. He was unable to take either solid or liquid food, even in small quantities without causing a return of the pain, a teaspoonful of milk being sufficient to produce it. His condition was pitiable. His cheeks were hollow, eyes congested, skin pale and sallow and his whole appearance showed the presence of intense pain.

I was called at the end of the third week of his illness. The former physician had employed opiates in large doses with most worthless results, also many other drugs with not a sign of improvement, he growing seriously worse. I determined that Hydrozone and Glycozone were the remedies indicated, and were the only ones that would be of value here, therefore, I gave him, at once, one-half glass of a mixture of one-half ounce of Hydrozone with a little honey to one quart of water. He was somewhat disturbed for a while after the potion, but was soon relieved. The distress, I presume was due to the advanced stage of the inflammation. I continued to administer this for some time, with only a slight improvement, but after several doses had been taken, the relief was very decided. After his nourishment, I gave one teaspoonful of Glycozone in a wine glass of water. After a few doses of this, he was much easier and, at midnight, fell asleep and slept all night not awakening until morning, the first sleep that he had had in five days. I had previously discarded all other remedies, of which there was a large number, as one after another was given with no benefit. All of the acute symptoms disappeared in a few days, at which time, he felt very much better, and he continued to improve without having a recurrence of any of his old severe

symptoms. Before this, I had increased both the nature and the quantity of his food which he relished greatly. I continued the Hydrozone and Glycozone for a month after, to entirely reduce the inflamed condition of the mucous membrane of the gastro-intestinal tract. These two remedies have afforded me most excellent issues many times in the treatment of gastric and intestinal disorders.

All gastric and intestinal disturbances are caused by the lining of the stomach becoming inflamed, and in order to allay this inflammation, it must first be treated with antiseptics then with medicaments that both heal and stimulate the mucous membrane that has become diseased. The most common cause for this state of inflammation is a greatly diminished quantity of gastric juices necessary for digestion, consequently, the food partaken of, instead of being assimilated, ferments, in other words, the peptic glands whose function it is to secrete the gastric juice, do not perform their function properly. These must be restored to their normal state at once, which is accomplished by remedies that exert a stimulating effect upon them, and at the same time are non-toxic, else the trouble will only be aggravated. Hydrozone and Glycozone are the two remedies par excellence for these two purposes, and the success that I have obtained from the employment of them during the past few years will lead me to always use them in these disorders.

Hydrozone causes destruction to microbes, has no deleterious action upon animal cells, possesses no toxic qualities, exerts no corrosive effect upon healthy mucous membranes when used in diseases caused by germs, is a pus destroyer and a stimulant to granulating tissues. Hydrozone is destruction itself to the skin or mucous membrane that has become diseased, and leaves the subcutaneous tissues in a perfectly healthy state.

Glycozone while not so rapid in its action as Hydrozone is, nevertheless, just as sure a stimulant, and in all gastric and intestinal disorders, exerts a potent and uninjurious effect upon the diseased mucous membrane of the stomach, healing it to a nicety. It is an effective oxidizing agent, has an agreeable, sweet and, at the same time, slightly acid taste resembling lemonade. Its use produces no deleterious action on the heart, liver or kidneys.

The beneficial results which Hydrozone and Glycozone have afforded me in the treatment of this class of disorders have caused me to discard all the other methods of treatment by drugs that exert an ephemeral influence, but do not jugulate the offending condition. What is needed in these diseases is an antiseptic that will destroy all pathogenic germs, and at the same time stimulate the walls of the stomach. Hydrozone kills the bacteria, dissolves the mucus and prepares the stomach to better digest the food, in short it deterges the stomach, hence in it we have an efficient antiseptic; Glycozone removes the mucus from the walls of the stomach, stimulates and heals. I have discovered these two preparations to be ideal ones in treating this very common and distressing disorder.

THE ADVANTAGES OF THE SPRAY IN PSEUDO-MEMBRANES OF THE PHARYNX.

By D. C. BROWN, M. D., Danbury, Conn.

(Abstract from *New England Medical Monthly*, for January, 1900.)

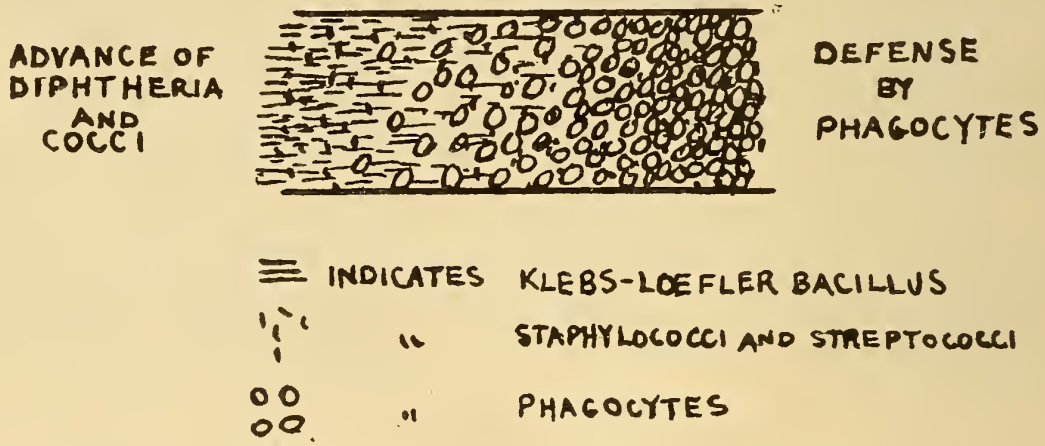
The membrane of diphtheria is much thicker and more adherent than other exudates in the region of the pharynx, the underlying surface being less protected owing to its greater loss of tissues. The exposed surface has the diphtheria bacillus in abundance, *reproducing* itself and generating toxins. The toxin, however, may be absorbed and the bacilli are capable of infecting a new area. The mixed or single form of cocci are less numerous on the surface, but increase in numbers as we penetrate the membrane and may enter the organized tissues themselves. The material from the

organism, which may act as a barrier to the further entrance of the bacteria, are superficially the coagulated fibrinous serum; dead superficial layers of true membrane; dead phagocytes; living phagocytes and their alexins; and, lastly, vital tissue denuded of its natural protecting membrane, but covered with this pseudo-membrane.

So much for the resistance that the organism is able to make to the attack. Now by one of the greatest acquirements of modern medicine we are able to neutralize the toxin by the use of antitoxin. It does not stop the production of toxin, but it does either neutralize the toxin absorbed, or render the system more or less immune, from future immediate effects. Clinically we are all pleased to believe that it may hasten the separation of the pseudo-membrane. Perhaps it does.

Natural forces have demonstrated themselves inadequate to protect from invasion, and only partially able to subdue the enemy after he has gained a foothold, while he is drawing from a rich base of supplies and recruits. It is with the spray, therefore better than any other means, that you may attack the enemy in the rear, destroy his supplies and prevent the recruits from joining the line of battle. Irrigation fails to give the penetrating power necessary to get to the middle layer of the pseudo-membrane.

To prevent the errors that the attendant, if not a trained nurse, is liable to make, I always try to make an early application myself, and insist in the first place on good light. Next a depressed tongue and a good view of the infected area as evidenced by the pseudo-membrane. Then with the tongue depressed by the left hand I shoot diagonally across from one side of the mouth into the opposite tonsil, or the pseudo-membrane, whether it is on the tonsil or not. Avoid the uvula unless covered with pseudo-membrane, and in fact avoid any healthy membrane with the direct force of the spray, for I aim to get force enough to see the tissues splay out with the spray. Each man who uses the spray, I presume, has his own favorites and those that he relies upon. Personally I have two that I use in accordance with the case. The first is Hydrozone, and I direct that the nurse put two teaspoonfuls with 3 to 8 teaspoonfuls



of water and use it at first every half hour or hour. I use this especially in all denser membranes that the Hydrozone may break up and disinfect the middle layers of the pseudo-membrane. It makes a way for other antiseptics which can then be used if you have any fear about too free a use of the Hydrozone.

The second spray is a solution of Formaldehyde, Merck's, one-fourth per cent. or Formalid or Borolyptol, which have the same amount of formaldehyde besides other aromatic disinfectants.

℞ Sol. Formaldehyde, ¼%, 30–60, ℥ j–℥ ij.
Kal. chlor., 8, ℥ ij.
Acid Boracic, 4, ℥ j.
Glycerine, 15, ℥ ss.
Aq., ad 120, ℥ iv.

M. Sig. Use in spray after the Hydrozone.

This I make the standby and vary the strength according to the conditions, and continue with it when the pseudo-membrane has become so thin that I do not care to continue with the Hydrozone. Remembering the middle layers of the pseudo-membrane and the depths of the crypts, I shoot hard and quick and resort to the spray early, and very often do not have to use the antitoxin.

LA GRIPPE.—ITS MANIFESTATIONS, COMPLICATIONS AND TREATMENT.

By W. W. GRUBE, A. M., M. D., of Toledo, O.

Professor of Physiology and Clinical Medicine, Toledo Medical College, Toledo, O.

(Abstract from the *Journal of the American Medical Association*, March 25, 1899.)

Professor Grube sees no reason why the intelligent observer need err in his diagnosis of la grippe; he believes that the intensity of the catarrhal symptoms, the great prostration and tardy convalescence form a typic clinical picture. Though the catarrhal symptoms are usually limited to the respiratory mucous membrane, they are not always so, and in the writer's experience the invasion of the mucous membrane of the digestive tract has been quite frequent. Not alone mucous membrane, but a part of all the cerebro spinal axis has been invaded.

In many cases the so-called complications are simply an extension and aggravation of the catarrhal or inflammatory condition; thus an extension of the usual inflammatory condition of the throat through the Eustachian tube produces middle-ear complications; the bronchitis, too, may extend and become capillary, or even a pneumonitis may result. So we believe that in the so-called abdominal form with severe gastro-enteric catarrh, it may extend by *contiguity* and inaugurate a general peritonitis. Upon this theory alone can we explain the supervention of a severe general peritonitis in a case under our care, now happily terminating in convalescence.

The patient was a girl of 11 years who had never been seriously ill before. Twenty-four hours after the illness began, she had, besides the usual alarming symptoms of la grippe, a high temperature, wild delirium, constant emesis, frequent and copious discharge of feces and urine. The appropriate remedies were prescribed, the vomiting ceased and she rested; but on the third or fourth day she developed symptoms of peritonitis, abdominal pain, hardness and some tympanites, etc. Calomel was prescribed, twenty grains divided into four powders, one every three hours; also the usual turpentine stupes, morphia to quiet pain, etc. The next day, finding no improvement, but rather aggravated symptoms, green vomit, bowels not moved—a very gloomy prognosis was given, and at the family's request a consulting physician was called, who concurred in diagnosis and prognosis, and had nothing more to suggest. On the writer's return in the evening, however, he decided in view of the great mortality of these cases by a routine treatment, to try the local application of a mustard poultice; also, for their germicidal, antiseptic and healing qualities, he gave internally Hydrozone diluted in frequent doses, alternating with doses of Glycozone. In twenty-four hours there was slight improvement. In forty-eight hours the patient was decidedly better. Improvement continued, and the girl was so well February 21st that she was dismissed as cured.

Perhaps the most common complication in children is the middle-ear inflammation caused by extension of the pharyngeal catarrh up the Eustachian tube into the tympanum. In the case of a child six months old, recently under our care, we had a middle-ear complication; in which the pain was controlled by the usual methods and by the installation into the aural canal of a few drops of cocaine solution. After suppuration occurred, however, the canal was cleansed by Hydrozone solution (warm), and a piece

of absorbent cotton saturated with Glycozone used as a dressing by inserting it into the canal. As the ear complications sometimes prove very serious, it is gratifying to know that in the above remedies we have a safe, speedy and effectual method of cure. We believe also that, if these cases were seen early, by proper treatment the extension and consequent complications might be prevented. In a little girl with severe tonsillitis and pharyngitis we are now spraying the throat with diluted Hydrozone and applying Glycozone with such marked benefit that on this the third day of treatment, she is almost well.

In concluding Professor Grube states: "I cannot refrain from referring to the case of a prominent city official who had an unusually severe attack of la grippe. All the structures of the nasal cavities were involved in a severe acute catarrh, which progressed to the stage of suppuration. Enormous quantities of pus were secreted, and the location and intensity of the pain led us to fear involvement of the antrum. However, the free use of Hydrozone solution by spraying, and the application of Glycozone soon cleared up the cavity, and in a few days complete cure resulted."

THE TREATMENT OF CATARRHAL CONJUNCTIVITIS.

By MILTON P. CREEL, M. D., of Central City, Ky.

(Published by *The Medical Summary*, of Phila., Pa., March, 1900.)

Either as it appears as a simple catarrhal inflammation of the conjunctiva, affecting one individual, or when it is encountered in an epidemic, there is no doubt but that catarrhal conjunctivitis is an affection of great importance. This affection is essentially simple, but if allowed to go along without correct treatment it may terminate in entire loss of vision. However, if the affection be given proper and timely attention it yields with great readiness to treatment.

Either as simple catarrhal conjunctivitis seen in a single individual, or when the affection manifests itself in the epidemic form, the treatment is essentially the same. Of course, individual peculiarities in each case make certain indications fitting and even imperative. One thing which a large experience with the disease has taught me is, that prompt and systematic treatment must be instituted in every case. Often patients with strumous diathesis will have chronic conjunctivitis, and persons whose health is poor will also have protracted forms of the affection, with the loss or great impairment of sight, when if proper and timely treatment had been instituted a cure could have been effected within a very short time. In the treatment of catarrhal conjunctivitis there have been many mischievous measures brought to bear.

All and everything which produces irritation will render all the elements in the case worse. We must never employ strong solutions. A lotion composed of 10 grains of sulphate of zinc to an ounce of distilled water will aggravate any case. All lotions must of necessity be mild and soothing.

As a curative means I have come now to rely on what I term the antiseptic treatment. This has been productive of better results in my hands than the old-time remedies.

In carrying out this treatment I first have the nurse to bathe the eyes thoroughly with this antiseptic mixture:

℞ Hydrozone, ʒ j.
Aqua, q. s. ad ℥ iv.

This mixture is used three or four times daily, as the case may appear to demand. Just as often as this mixture has been copiously applied and the eyelids have been dried, I apply, by the means of an ordinary glass medicine dropper, two drops of Marchand's Eye Balsam.

This remedy reaches every part of the conjunctiva by the movements of the lids, and it is not irritating; the patient generally makes rapid progress to recovery.

By this treatment I have found my patients to recover in from thirty-six hours to three days. In fact my success has been such that I now rely upon this treatment entirely in this affection.

Four months ago an epidemic of catarrhal conjunctivitis broke out in a boarding school. I was called and ordered these remedies used on every case that presented itself. The nuns told me that all the cases got well speedily.

Mr. Samuel S., age 39. This patient had been suffering, as he put it, with "sore eyes" for three days. It was a simple case of catarrhal conjunctivitis, but gave him great discomfort. On the treatment described above he entirely recovered in two days.

Mrs. Laura S., age 22. This patient thought she had something in her eye, but examination revealed catarrhal conjunctivitis. On this treatment she made a speedy recovery.

These are only two of the several hundred cases treated on the antiseptic principles.

THE TREATMENT OF VENEREAL ULCERS.

By N. E. ARONSTAM, M. D., Ph. G.

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(Published by *The Medical Age* of Detroit, Mich., April 25, 1900.)

The treatment of venereal ulcer in its incipiency is much more important than in its maturity, and after its extension into the deeper tissues. In fact, the latter, as well as the phagedenic or serpiginous forms, can be conveniently prevented by observing the first principles.

In the first place, individuals suffering from venereal ulcers should be put upon a strict dietary regimen, with total abstinence from alcohol in any form. The diet should be light, nutritious, and easily digested. Tobacco is a source of irritation, and should be prohibited. Direct the patient to abstain from coitus and sleep on a hard mattress, but lightly covered. The patient must be kept as quiet as possible, with the genitalia enveloped by a suspensory bandage.

There are but two general therapeutic indications in connection with the treatment of the ulcer proper, viz.:

1. Cleanliness.
2. Cauterization.

The first consists in keeping the sore absolutely clean, free from all irritating discharges, and separated from the healthy tissues. This can be accomplished by the various antiseptics, the names of which is legion. The majority of them are worthless, some deserve but a passing consideration, while others—and these are numbered—are the *ne plus ultra* among them. To the latter belongs the medicinal H_2O_2. Hydrozone is the remedy I mostly rely on. The ulcer and the surrounding inflamed area should be thoroughly washed at first with a hot boric acid solution, one drachm to the pint, followed by the application of Hydrozone in full strength or diluted, according to the case, by means of absorbent cotton wrapped on an applicator; this should be repeated every day. It is a valuable oxidizing and antipruritic agent; its effect is almost immediate; the ulcer loses its purulence and leaves behind a clean, smooth floor.

I have obtained wonderful results with Hydrozone thus applied. Out of forty-three cases treated as above described, thirty healed completely, seven were indifferent and had to be finely cauterized, while the remaining six were serpiginous and only yielded after a dorsal incision or circumcision, with the subsequent application of Hydrozone. The antiseptic treatment is only applicable in cases where the ulcerative process is not extensive. Phagedenism may and can be avoided by the judicious treatment of the ulcer in its incipiency. All the dressings used upon or about the sore must be

destroyed immediately after removal and the patient cautioned to scrupulously clean his hands, after the dressings are completed, otherwise inoculation of other mucous surfaces might ensue.

Cauterization.—This should only be practiced when positively indicated. As a general rule it is unnecessary and even harmful, provided the ulcer can be kept surgically clean in the manner described above. A venereal ulcer should never be allowed to extend and become serpiginous or phagedenic. The latter, however, occurs not frequently in cases where the antiseptic treatment has not been strictly adhered to, or when the patient presents himself for treatment late in the ulcerative process. In such cases, where in spite of cleanliness and proper local treatment it extends and threatens to destroy the neighboring tissues, we are compelled to resort to more energetic measures.

Cauterization is accomplished in the following manner: The ulcer is washed with a hot solution of boric acid, dried by means of absorbent gauze, and touched with cotton saturated with pure Hydrozone. The pledget of cotton and the wooden applicator should be destroyed immediately after. It is imperative to apply it not only to the base, but also to the undermined walls and margins of the ulcer. This should be repeated at least every second day. The patient is directed to remain quiet in the recumbent posture for some time after. In the meantime the penis should be bathed in hot Hydrozone solution (one ounce of Hydrozone to a pint of water) three times daily, followed by applications of Glycozone dressings, which not only dehydrates the inflammatory area, but also checks the suppurative process. In connection with the local treatment the patient's general condition must be enhanced by the administration of iron, quinine, and strychnine, with plenty of nutritious food and fresh air.

It is a bad policy to give opiates in cases of painful ulcers, for we render the already morbid tissues still more vulnerable toward further destruction.

The bowels must be kept freely open by a mild laxative, as saline purgatives are apt to produce urethral irritation.

By far the worst cases to treat are those situated at or within the urethra. They require a special treatment. Before resorting to local applications or injections I begin with an alkaline diuretic, as pot. citrate, acetate, or bicarbonate, in combination with fluid extract of pichi. This renders the urine alkaline and lessens the pain on micturition. The dietary regimen, pointed out above, is equally applicable to this sort of cases. After this treatment has been followed for a day or two I proceed as follows:

The patient having urinated, the prepuce is retracted and the parts washed off with a hot solution of diluted Hydrozone. A small soft-rubber catheter, lubricated with cosmoline, is then passed down the urethra beyond the site of the lesion, and a pint of warm water, to which one ounce of Hydrozone has been added, is injected by means of an Ultzman hard-rubber hand-syringe or irrigator. In this way the canal is deterged from behind forward, the solution escaping at the meatus urethra, where it is caught in a suitable vessel. Boric acid or iodol is then blown into the urethra and the organ enveloped with sterilized gauze.

A word about the surgical treatment of venereal ulcers. The latter, if situated beneath a tight prepuce, which cannot be retracted, demands surgical interference. Before resorting to this, frequent and copious injections of mild solutions of Hydrozone between the prepuce and glans may be tried, as it oftentimes effects a cure.

If the ulcer is persistent, however, then the best plan is to make two lateral incisions through the prepuce and expose the ulcer for local treatment, thus preventing gangrene, with more or less destruction of the glans penis and the surrounding parts. The venereal ulcer is then treated in the manner outlined above. The raw margins of the wound are protected from infection by means of frequent dressings and ablutions with solutions of Hydrozone and boric acid. The hemorrhage may be quite profuse, but is readily checked by repeated applications of Hydrozone on absorbent lint. After the margins of the flaps have healed, they may be removed by a simple plastic operation.

This is a short summary of the routine treatment I have adopted in treating venereal ulcers; and the results that I have obtained are most gratifying.